THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

Vol. 38, No. 4 | 540 N. Michigan Ave., Chicago, Ill. | December, 1938

MERRY CHRISTMAS

HAPPY NEW YEAR

GREETINGS to our readers and advertisers. May your Christmas be happy and the New Year bring health and prosperity. We appreciate your interest and support and hope for the continuation of these pleasant relations.

NEW!—Cutler & Buschke on CANCER

Just Off Press—This *brand new* book deals with the Diagnosis and Treatment of Cancer—the *Clinical* methods and treatments that have been developed and tested in the light of actual experience over a long period of years. It is a work planned to give the physician in everyday practice, as well as the surgeon and specialist, a sound and dependable guide.

Dr. Cutler and Dr. Buschke have taken thoroughly into consideration the modern problems presented in the *early diagnosis* of cancer. Causes, clinical manifestations, pathologic aspects, manual and instrumental methods of examination, spread of cancer—all are considered. There is an extensive discussion of *biopsy,* including methods and techniques of obtaining specimens, microscopic examination, significance of findings, etc.

Much of the confusion that has long existed regarding the *treatment of cancer* has been eliminated in this *new* book. You are told specifically just what therapy is indicated, how and when it should be instituted, the technique or dosage, and the results to expect. There is a complete chapter on *Irradiation,* including its possibilities and hazards and how to overcome these hazards.

By Max Cutler, M.D., Associate in Surgery, Northwestern University, Chairman, Scientific Committee, Chicago Tumor Institute; and Franz Buschke, M.D., Assistant Roentgenologist, Chicago Tumor Institute. Octavo of 757 pages, with 509 illustrations on 346 figure numbers. Cloth, $10.00 net.

W. B. SAUNDERS COMPANY **Philadelphia and London**

Your Help Appreciated

"Enclosed is a money order covering the interest and final payment on the principal of my loan.

"At this time I wish to express my sincere gratitude to the committee which has provided me with sufficient funds to enable me to complete my osteopathic education.

"While the loan was small at my own request, it represented the difference between a future and blasted hopes.

"I have attempted to justify the faith placed in me by the Loan Committee. The loan fund is a noble enterprise and represents another gesture on the part of the A.O.A. to serve the profession.

"While the enclosed check ends my obligation to the fund, my interest in it will never cease.

"Only one who has received its benefits can possibly appreciate its humanness."—H. M. C.

★ ★ ★ The Need ★ ★ ★

Every year a number of worthy students in osteopathic colleges face the possibility of not being able to graduate unless they can obtain financial assistance. After exhausting other sources of help they appeal for aid from the Osteopathic Student Loan Fund of the American Osteopathic Association.

This revolving fund was founded eight years ago and has been an outstanding success. An example of the appreciation expressed by one who has benefited by this fund is quoted above.

To date 59 students, representing six osteopathic colleges, have been granted loans totalling $13,925. Thus far 18 loans have been repaid with interest at 5 per cent. 41 loans are outstanding.

The present assets of the fund are $18,077. About a fifth of this amount consists of investments that have been given to the fund from which only the interest is used for loans. Special gifts and bequests are received each year.

Because of the lack of funds, loans have been restricted to senior students but it is hoped that enough money will be available soon to extend this privilege to juniors.

The Opportunity

The annual sale of Christmas Seals to osteopathic physicians, their patients and friends, has been one of the principal sources of the money collected for this laudable enterprise. The seals this year carry a new design printed in bright colors. They must be seen to be appreciated.

No one who receives the seals is obligated to purchase them. They should not be wasted but used for their publicity value. The committee requests $1.00 for each 100 seals, but hopes that the average contribution will exceed that amount. The names of all donors, professional and lay, who give $5.00 or more, will be published in the Forum of Osteopathy. Last year gifts ranged all the way from a few cents to $1,000. There were more contributions amounting to $5.00 or more than in any previous year.

STUDENT LOAN FUND COMMITTEE
of the
American Osteopathic Association 540 N. Michigan Ave., Chicago

VISCEROPTOSIS SUPPORTS

After speaking of diet, exercise and medication in the treatment of visceroptosis, a writer on visceroptosis continues as follows: "Supporting measures are the most important influences in correction, but the prescribed supportive corset or belt with its pads must be designed and constructed to remedy the actual faults found upon X-Ray examination . . . Important rules which must be followed are as follows: (a) The corset must first be adjusted while the patient is lying down . . . and the uppermost part of corset or belt must never be pulled tight, but must be worn just comfortably snug so the uplift will not be obstructed. (b) The corset or belt must be removed only during periods when patient is lying down."

A—Showing the stomach well below the crest of the ilium

B—Same patient after application of visceroptosis support

Camp surgical fitters are trained in our schools to observe the rules of the Doctors and to give proper instructions to the patients. Camp visceroptosis supports are always constructed with two strap adjustments in order to allow of the "comfortably snug" adjustment of the upper part of the support.

CAMP TRADE MARK *Supports*

S. H. CAMP & COMPANY, JACKSON, MICHIGAN

Offices in New York, Chicago, Windsor, Ont., London, England • World's largest manufacturers of surgical supports

CONTENTS, DECEMBER, 1938

ORIGINAL ARTICLES—
Mechanical Control of Posture. Carter Harrison Downing, M.D., D.O. San Francisco....185
Symposium on the Coronary Syndrome: Statistical Approach. Harry L. Collins, M.D., D.O., Chicago....192
Etiology,, Pathology and Clinical Diagnosis. J. S. Denslow, D.O., Kirksville, Mo. 193
The Osteopathic Aspect. Esmond C. Appleyard, A.B., D.O., Chicago 195
Management. S. V. Robuck, D.O., Chicago 198
Surgical Procedures. Harry L. Collins, M.D., D.O., Chicago....200
DALLAS CONVENTION NEWS....201
ANDREW TAYLOR STILL MEMORIAL. Ray G. Hulburt, D.O., Chicago 200
EDITORIALS—
An Aid to Calcification of Bone. R. E. Duffell, D.O., Chicago....203
The Legislative Situation. Ray G. Hulburt, D.O., Chicago....204
The Colleges—III. R. C. McCaughan, D.O., and Ray G. Hulburt, D.O., Chicago 205
DEPARTMENT OF PUBLIC AFFAIRS—
Bureau of Industrial and Institutional Service:
"Labor Contact". John P. Wood, D.O., Birmingham, Mich....207
The Need for Compensation Statistics. J. J. McCormack, D.O., Sheboygan, Wis....207
Bureau of Public Health and Education: Utilizing the Women's Auxiliary. J. O. Watson, D.O., Columbus, Ohio....207
PUBLIC RELATIONS COMMITTEE....208
COMMITTEE ON SPECIAL MEMBERSHIP EFFORT—
Directory to Press December 1. Frank E. MacCracken, D.O., Fresno, Calif. 208
DEPARTMENT OF PROFESSIONAL AFFAIRS—
Bureau of Hospitals:
Osteopathic Hospitals Approved for Intern Training....208
Osteopathic Hospitals Would Prevent Discrimination 208
Bureau of Professional Education and Colleges:
Associated Colleges Vocational Survey....210
DIAGNOSIS AND TREATMENT—
An Approach to Psychogenic Disorders, Part II. R. J. Chapman, Los Angeles 210
CURRENT OSTEOPATHIC LITERATURE 214
STATE BOARDS 215
CONVENTIONS AND MEETINGS....215

SUBJECT INDEX

Angina Pectoris: See Coronary Syndrome

Appleyard, Esmond C.:
The osteopathic concept of the coronary syndrome 195*

Arteriosclerosis and the coronary syndrome 192*

Associated Colleges of Osteopathy:
vocational survey 210-Pr.A

Associated Hospitals of Osteopathy:
approved hospitals for intern training 208-Pr.A
to prevent discrimination....208-Pr.A

Body mechanics and posture, [Downing] 185*

Bone, an aid to calcification of, [Duffell] 203-E

Book Notices:
Clinics on Secondary Gastrointestinal Disorders; Reciprocal Relationships. Julius Friedenwald, Theodore H. Morrison, and Samuel Morrison ....ad page 21
Civilization and Disease. C. P. Donnison ....ad page 21
Step by Step in Sex Education. Edith Hale Swift ....ad page 21
A B C of the Vitamins: A Survey in Charts. Jennie Gregory ....ad page 22
Physical Therapy in Arthritis. Frank Hammond Krusen ....ad page 22
Injection Treatment of Varicose Veins and Hemorrhoids. H. O. McPheeters and James Kerr Anderson....ad page 22
A Prairie Doctor of the Eighties. Francis A. Long ....ad page 22
Glaister's Medical Jurisprudence and Toxicology. John Glaister ....ad page 22
Books Received ....ad page 21

Brooke, Colin: Dallas Convention Program nears completion 201
Calcification of bone, [Duffell]....203-E

Chapman, R. J.:
An approach to psychogenic disorders, part II 210-DT

Chicago College of Osteopathy:
the coronary syndrome, [Collins, Denslow, Appleyard, Robuck]....192*

Colleges:
editorial, part III, [McCaughan and Hulburt] 205-E
undergraduate essay contest....191
vocational survey 210-Pr.A

Collins, Harry L.:
Statistical approach to the coronary syndrome problem 192*
Surgical procedures 200*

Compensation statistics, need for, [McCormack] 207-Pu.A
See also Works Progress Administration

Convention News, Dallas:
Program nears completion [Brooke] 201

Conventions and meetings:
announcements 215
official and affiliated organizations....215

Coronary Syndrome, Symposium on the:
statistical approach, [Collins]....192*
etiology, pathology and clinical diagnosis, [Denslow] 193*
osteopathic concept, [Appleyard]....195*
management, [Robuck] 198*
surgical procedures, [Collins]....200*

Current osteopathic literature....214-COL

Denslow, J. S.:
Etiology, pathology and clinical diagnosis, coronary syndrome....193*

Dermatoses, role of osteopathic lesion in, [Hedges] 214-COL

Downing, Carter Harrison:
Mechanical control of posture....185*

Duffell, R. E.:
An aid to calcification of bone....203-E
Current osteopathic literature....214-COL

Essay contest, undergraduate....191

Fractures and bone calcification, [Duffell] 203-E

Heart Disease: See Coronary Syndrome

Hospitals, bureau of:
approved for intern training....208-Pr.A
to prevent discrimination....208-Pr.A

Hulburt, Ray G.:
Andrew Taylor Still....202-E
The legislative situation....204-E
The colleges—III....205-E

Industrial and institutional service, bureau of:
labor contact, [Wood]....207-Pu.A
need for compensation statistics, [McCormack] 207-Pu.A

Insurance: See compensation statistics

Labor contact, [Wood]....207-Pu.A

Legislative situation, election results, [Hulburt] 204-E

MacCracken, Frank E.:
Directory to Press December 1....208

McCaughan, R. C.:
The colleges—III....205-E

McCormack, J. J.:
The need for compensation statistics 207-Pu.A

Membership, A.O.A.:
committee on special membership effort..208
Directory to press December 1....208

Obstetrics:
second stage of labor, [Milum]....214-COL

Osteopathic lesion and dermatoses, [Hedges] 214-COL

Osteopathy:
During Still's time and now, [Hulburt] 202-E

Posture, mechanical control of, [Downing] 185*

Professional affairs, department of....208-Pr.A

Psychogenic disorders, an approach to, part II, [Chapman]....210-DT

Public affairs, department of....207-Pu.A

Public health and education, bureau of:
radio programs 191
utilizing the women's auxiliary, [Watson] 207-Pu.A

Public relations committee:
W.P.A. request for treatment and report forms 209-PRC

Radio programs 191

Robuck, S. V.:
Management of the coronary syndrome 198*

State Boards:
District of Columbia....215-SB
Florida 215-SB
Iowa 215-SB
Louisiana 215-SB
Missouri 215-SB
Vermont 215-SB
West Virginia 215-SB

Still, Andrew Taylor, Memorial [Hulburt] 202-E

Strong vocational survey....210-Pr.A

Truth, [Ogilvie]....210-Ab.

United States Employees' Compensation: See Works Progress Administration

Vocational survey by Associated Colleges of Osteopathy 210-Pr.A

Watson, J. O.:
Utilizing the women's auxiliary....207-Pu.A

Wood, J. P.:
"Labor contact" 207-Pu.A

Works Progress Administration:
request for treatment and report forms, [Swope] 209-PRC

Published monthly by the American Osteopathic Association. Office of Publication, 1140 Lake St., Oak Park, Ill. Address all communications to the Main Office at 540 North Michigan Ave., Chicago, Ill. Eastern Advertising office, Lawrence B. Williams, Manager, 11 West 42nd St., New York, N. Y., telephone Pennsylvania 6-1949. Subscription, $5 a year. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 31, 1922. Entered at the Oak Park, Illinois, post office as second class matter, April 1, 1926, under the Act of March 3, 1879.

HEMATINIC PLASTULES

Thrifty and Effective

This effective iron medication is available, on your prescription, at a cost of only a few pennies per day!

More than two weeks' treatment with Fifty Hematinic Plastules Plain may be obtained at an average cost of less than one dollar.

Each Hematinic Plastule Plain provides five grains of ferrous iron and the vitamin B complex of concentrated yeast.

A marked improvement attends the use of Hematinic Plastules in cases of hypochromic anemia. They are well tolerated and easy to take.

TWO TYPES

Hematinic Plastules Plain *Hematinic Plastules with Liver Concentrate*

THE BOVININE COMPANY • 8134 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

RECENT ADVANCES IN THE SCIENCE OF NUTRITION

IV. Some Accomplishments of Vitamin D Research

● By 1932, many of the basic facts concerning Vitamin D had been clearly established (1). At that time, the International system of denoting vitamin D unitage had not been universally adopted. However, the antirachitic potencies of a wide variety of biological materials had already been explored; the need for standardization of assay methods was appreciated; the minimum requirement of infants and children for vitamin D had been estimated; and the probable "multiple" nature of the vitamin definitely indicated.

Since 1932, the importance of vitamin D in human nutrition and the challenge of the many unanswered questions regarding this factor have served to stimulate research both in the clinic and in the laboratory. It is of interest to note some of the outstanding advances made in our knowledge of vitamin D which the past six years have brought.

It is now known that at least ten different sterol derivatives are capable of exhibiting the physiologic properties of vitamin D. Of these, only two may be considered of prime importance as far as practical application in human nutrition is concerned, namely, the activation products of ergosterol and 7-dehydro-cholesterol. The remaining forms are of considerable theoretical importance in that their identification has completely established the multiple nature of vitamin D (2).

Further research has also defined more closely not only the vitamin D requirements of normal infants and children, but also of premature infants and those peculiarly susceptible to rickets. Apart from conditions of pregnancy and lactation, the possible requirement of the human adult for vitamin D is still not known (3). The International system of expressing vitamin D potency has been universally adopted; bioassay methods have been standardized (4); and last but not least, a high degree of standardization has been attained, not only in regard to the antirachitic potency of Vitamin D preparations, but also as to the extent to which the vitamin D contents of certain foods should be increased by the various means available (3).

While some foods, including some canned foods of marine origin, are valuable food sources of vitamin D (5), no combination of common foods—as they occur naturally—can supply the demands of the infant and child for the antirachitic factor. Although there is no reason as yet to believe that the normal adult requirement for vitamin D is not largely fulfilled by a varied diet of protective foods, it is definitely known that the infant and child dietaries must be supplemented with or fortified by vitamin D.

It is in the formulation of basic diets for either infants or adults that commercially canned foods should prove especially valuable. Among the great variety of American canned foods are included special foods for use in child and infant feeding which, when properly supplemented or fortified, should meet the nutritive demands of those stages of life. For the normal human adult—whose diet hardly requires special supplementation—there are a large number of canned foods available which readily permit formulation of a varied diet of the so-called protective foods.

AMERICAN CAN COMPANY
230 Park Avenue, New York, N. Y.

(1) 1932. J. Amer. Med. Assn. 99, 215 and 301.
(2) J. Amer. Med. Assn. 110, 2150.
(3) Ibid. 110, 703 and 1179.
(4) 1936. U. S. Pharmacopeia, XI Decennial Revision.
(5) 1935. J. Home Econ. 27, 658.
1933. Science 78, 368.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-third in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

"Vitamin B is probably less adequately supplied in the average American diet than any of the known vitamins and other food factors essential to health"*

*Tisdall (1935) J. A. M. A. 105-1583

WHY RALSTON, THE HOT WHEAT CEREAL, IS THE EASY, ECONOMICAL ANSWER TO VITAMIN B DEFICIENCY

EVERY DOCTOR KNOWS that many so-called "well-fed" children exhibit the familiar symptoms of vitamin B deficiency . . . general weakness, slow heartbeat, nervousness, poor appetite, gastric disturbances and decreased peristalsis. What is the answer?

APPARENTLY "PERFECT" MEALS may be deficient in vitamin B. Many children's meals, though they contain well-recommended foods, do not supply *enough* vitamin B to promote normal appetite, growth and weight increase during childhood.

RALSTON WHEAT CEREAL, added to most diets, protects against vitamin B deficiency. Ralston is enriched with wheat germ, which contains 7 times as much vitamin B as whole cereals or eggs . . . 16 times as much vitamin B as spinach . . . 40 times as much vitamin B as milk.

Comparative potency of vitamin B in cereals

	Vitamin B, International Units, per lb.
RALSTON	730
Wheat flakes	Largely destroyed by toasting
Farina	Too little to measure
Corn flakes	Destroyed by toasting
Rice (white)	None

IN CONTRAST to other cereals, Ralston supplies, in *one* serving, about ¼ of the normal adolescent daily requirement of vitamin B, 200 International Units, also abundant energy producing carbohydrates, wheat proteins and minerals.

Ralston is made from whole wheat, with coarsest bran removed and wheat germ added. Cooks in 5 minutes—costs less than 1¢ a serving. Delightful in flavor, it is THE hot wheat cereal children really like to eat.

RALSTON PURINA COMPANY
Dept. JAOA, 3703 Checkerboard Square, St. Louis, Missouri

Please send me a copy of your Research Laboratory Report and samples of Ralston, the Wheat Cereal which is "double rich" in vitamin B.

*Name*_____ *D. O.*

*Address*_____

(This offer limited to residents of the United States)

2½ times richer in Vitamin B

ADJUNCTIVE THERAPY

Buffer with Kalak

TRADE MARK REG. U.S. PAT. OFF.

Palatable Sparkling Neutralizing

AS a valuable aid to sulphanilamide therapy, physicians are prescribing Kalak because

1. It maintains the urine at the desired pH for optimum results (around 7.4).

2. It is ideally suited for inhibiting such untoward symptoms as gastric upset, skin rash, weight loss.

Kalak presents in a palatable, carbonated solution properly balanced proportions of buffer salts which do not increase motility in the intestinal tract. Kalak is not a laxative.

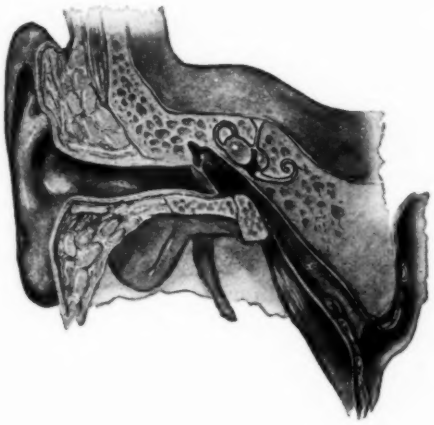
The Kalak formula presents in palatable, carbonated solution

Di-Sodium Phos. Crys. U.S.P.	309.1 parts per million
Potassium Chloride	117.6 parts per million
Sodium Chloride	606.0 parts per million
Sodium Bicarbonate	5793.0 parts per million
Calcium Bicarbonate	770.6 parts per million
Magnesium Bicarbonate	101.2 parts per million

Kalak affords a useful adjunct to salicylate, iodide medication, etc.—increases tolerance, enhances the therapeutic effect.

KALAK WATER CO. OF NEW YORK, INC. 30 ROCKEFELLER PLAZA NEW YORK, N. Y.

. . . IN OTITIS MEDIA



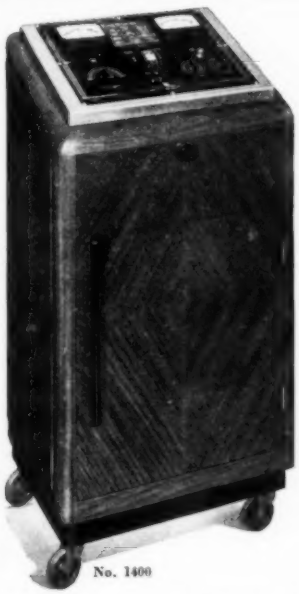
PURULENT liquid may accumulate within the middle ear — causing excess pressure from within (BULGING DRUM).

This tension may be relieved by means of the osmotic action of AURALGAN bringing drum to normal again.

AURALGAN inhibits bacterial growth.

THE DOHO CHEMICAL CORPORATION New York - Montreal - London

PRESCRIBE *Auralgan* IN PLACE OF PHENOL-GLYCERIN



No. 1400

The NEW

McIntosh Polysine Generator

— MODEL NO. 1400 —

What One User Says:—

"The new No. 1400 Polysine arrived last week. It is really a thing of beauty and a perfect working model. The patients have all noticed the difference in its smooth action compared with my previous Polysine."
(name upon request)

Another Speaks:—

"I am very well pleased with the new Polysine Generator (No. 1400). It is working beautifully—much superior to my old unit."
(name upon request)

Full Details! ☞

You will be equally pleased with this outstanding new galvanic and sinusoidal wave-current generator. Let us tell you about it.

McIntosh Electrical Corporation
"The Oldest Manufacturer"
235 No. California Avenue Chicago, Illinois

Gentlemen: A.O.A.—12-38

Tell me all about the new Polysine.

☐ Please have your representative demonstrate.

.....D.O.

.....

The Buffer Mechanism in Alka-Seltzer

This is the 10th in a series of laboratory and clinical experiments to confirm the value of Alka-Seltzer as an aid to the quick relief of certain minor, everyday symptoms for which medical attention is not usually sought or needed.

Previous experiments have shown that the analgesic in Alka-Seltzer is presented in the form of an acetylsalicylate (Exp. No. 1); that Alka-Seltzer exerts a local antacid effect in the stomach (Exp. No. 2); that it provides a systemic alkalizing action after absorption (Exp. No. 3); that it tends to hasten gastric emptying time in cases of persistent gastric hyperacidity (Exp. No. 4); that it helps to relieve gastric hyperacidity following alcohol consumption (Exp. No. 5); that it is more rapidly evacuated from the stomach than plain aspirin (Exp. No. 6); that it dialyzes more rapidly than aspirin suspensions (Exp. No. 7); that single doses of from 10 to 20 grains of acetylsalicylic acid as aspirin or Alka-Seltzer exert no demonstrable untoward effect on the heart (Exp. No. 8); that Alka-Seltzer reduces the acidity of the urine (Exp. No. 9).

RESEARCH PROBLEM NO. 10

To Determine the Comparative Rates of Hydrolysis in Acid Solutions of Sodium Acetylsalicylate Prepared by Neutralizing Acetylsalicylic Acid with Sodium Bicarbonate and of the Sodium Acetylsalicylate in a Solution of Alka-Seltzer

Experimental Method. The sodium acetylsalicylate was prepared by adding 200 mg. of sodium bicarbonate to 300 mg. of acetylsalicylic acid. This amount of sodium bicarbonate is 48 per cent in excess of the quantity of this alkaline salt necessary to neutralize 300 mg. of the acid but this excess was found necessary to prevent formation of acetylsalicylic acid due to hydrolysis of the sodium acetylsalicylate at room temperature. A solution of the mixture of these two compounds in distilled water, made up to 100 cc. after effervescence, was found to have a pH of 6.78, and at this time the solution contained no free acetylsalicylic acid.

A solution of Alka-Seltzer was obtained by dissolving one tablet in water and after effervescence had subsided diluting to 100 cc. This solution was found to have a pH of 6.93, no free acetylsalicylic acid being present.

In order to determine the comparative rates of hydrolysis by HCl, varying amounts of 1.0N hydrochloric acid were added to the solutions of sodium acetylsalicylate and these mixtures were incubated at 37° C in a water bath; during incubation the tubes containing the sample were shaken uniformly in an oscillator making 40 oscillations per minute through an arc of 8 inches.

Results. From the data obtained in a lengthy series of experiments it was found (1) that the rate of hydrolysis of sodium acetylsalicylate in a solution of Alka-Seltzer to which HCl had been added is at most not more than *one-fifth* of that found for this salt prepared from an excess of sodium bicarbonate added to acetylsalicylic acid; (2) experimental results indicate that Alka-Seltzer in solution contains an efficient buffer mechanism capable of protecting the sodium acetylsalicylate against hydrolysis by hydrochloric acid within a wide range of concentration; (3) experimental findings indicate that the end products resulting from dissolving an Alka-Seltzer tablet in water are sodium acetylsalicylate and sodium citrate and that the latter serves as an efficient buffer against hydrolysis.

•

An Alka-Seltzer tablet dissolved in a glass of water makes a sparkling, effervescent solution which helps to give relief from "sour stomach" brought on by indiscretions in eating and drinking and helps to relieve such minor symptoms as headache and discomfort accompanying the early stages of a cold.

MILES LABORATORIES, INC.
Offices and Laboratories: Elkhart, Indiana

No. 11 of a Series

THE CHINESE BACK SCRATCHER

NUPERCAINAL* "Ciba"

The Chinese back scratcher has been used in the Orient for centuries. In a dignified, leisurely way, the Chinese applies it to his back and other out-of-reach spots that itch.

Nupercainal, "Ciba" is today's anti-pruritic, an analgesic, local anesthetic ointment of prolonged action. Nupercainal relieves pain and itching soon after it is applied. Alleviation often lasts for twenty-four hours. Softly emollient, Nupercainal helps healing processes.

Nupercainal has been successful when all else failed in the treatment of sun burn, superficial burns, dry eczema, pruritus ani et vulvae, cracked nipples, decubitus, etc. Simply write "Nupercainal" on a prescription blank for samples and literature.

AVAILABLE IN ONE OUNCE TUBES (WITH PILE PIPE) AND IN ONE POUND JARS.

*Trade-mark Reg. U. S. Pat. Off.

CIBA PHARMACEUTICAL PRODUCTS, INC.

SUMMIT, NEW JERSEY

KNOX . . . CLINICAL NOTES

ONE OF A SERIES OF CORRESPONDENCE EXCHANGES WITH PHYSICIANS ABOUT KNOX GELATINE.

The Glycine Content of KNOX GELATINE

A physician writes, "Pertaining to Glycine—glycocoll NH_2CH_2COOH—gelatine contains large amounts of Glycine. I feed a great deal of Knox Gelatine to patients suffering from fatigability—'muscle exhaustion'—with very good results in conjunction with the administration of 15 to 30 grams of Glycine given daily. Glycine is rather expensive to patients—about eight dollars per pound. I wish to know the percentage of Glycine in your best grade Knox Gelatine so I may substitute more liberal feedings of Knox Gelatine and cut the pure Glycine dosage down to a lower and more economical level."

The KNOX GELATINE LABORATORY

Replied as Follows:

Thank you, Doctor! You are right about Knox Gelatine. Increasing amounts of it are being fed in asthenic conditions. Knox Gelatine contains 25% of amino-acetic acid (Glycine). Goodly amounts can be fed in soups, broths, and other recipes to supply amounts of Glycine in this palatable gelatine form which is so economical. Perhaps the simplest way to feed it is as follows:

Sample and useful Dietary Booklets on Request. Write Dept. 491

"THE KNOX MILK STIR"

Place the contents of 4 envelopes of Knox Gelatine in an ordinary drinking glass. Add 4 ounces of cold milk and allow to soak for five minutes. Add 2 more ounces of milk and stir until thoroughly soaked. Then place glass in small cooking kettle of hot water until gelatine milk mixture thoroughly dissolves. Add 2 more ounces of cold milk, which will bring the temperature to a satisfactory warm drink of about body heat. A tablespoonful of prune juice or a few drops of any bland flavor like vanilla may be added.

Total: 8 ounce liquid—about 250 calories

Why you should insist on Knox Sparkling Gelatine

Because Knox Gelatine is 85% protein in an easily digestible form—because it contains absolutely no sugar or other substances to cause gas or fermentation, Knox Gelatine should not be confused with factory-flavored, sugar-laden dessert powders. Knox is 100% pure U.S.P. gelatine. Knox Gelatine has been successfully used in the dietary of convalescents, anorexic, tubercular, diabetic, colitic, and aged patients.

KNOX SPARKLING GELATINE

IS PURE GELATINE—NO SUGAR

KNOX GELATINE LABORATORIES
JOHNSTOWN, NEW YORK

RUSH CALL

AFTER AN ALL-NIGHT OBSTETRIC CASE

Out again in a hurry. The Barnes boy is sick. Just half a breakfast. And how your head aches! Very often the harassed physician, nerves frayed, muscles tired, can use a good analgesic. It should leave the intellect unclouded.

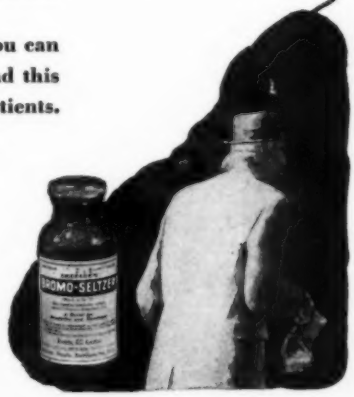
Bromo-Seltzer Brings PROMPT RELIEF

Bromo-Seltzer is one of the most efficient of modern analgesics. Clinical trial has demonstrated its rapid effectiveness in subduing pain of nerve origin. Bromo-Seltzer is a synergistic combination which achieves maximum analgesia with minimum dosage.

Bromo-Seltzer blocks the synapses and prevents the pain impulse from reaching the higher centers. Thus, there is no slowing of mental activity. On the contrary, Bromo-Seltzer acts as a gentle stimulant to mental processes. Citrates give zestful effervescence, and make Bromo-Seltzer a splendid alkalizer.

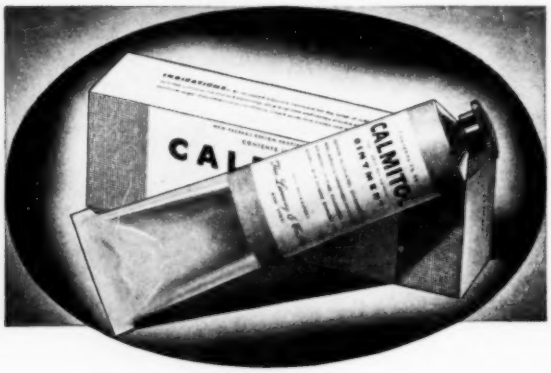
Bromo-Seltzer is worthy of your personal trial. You can then decide for yourself that it is safe to recommend this scientifically produced pharmaceutical to your patients.

For sample of Bromo-Seltzer, simply write.



EMERSON DRUG COMPANY

BALTIMORE MARYLAND



The Dependable Answer to the Problem of PRURITIC DISORDERS

Calmitol is indicated in all cutaneous lesions attended by itching. Acting directly upon sensory nerve endings and end organs, it effects adequate local anesthesia to provide sustained and complete relief. By encouraging local active hyperemia, it hastens tissue repair and distinctly aids in resolution. Calmitol is of accepted value in dermatitis venenata and medicamentosa, pruritus ani and vulvae, ringworm, urticaria, and the pruritus of the aged.

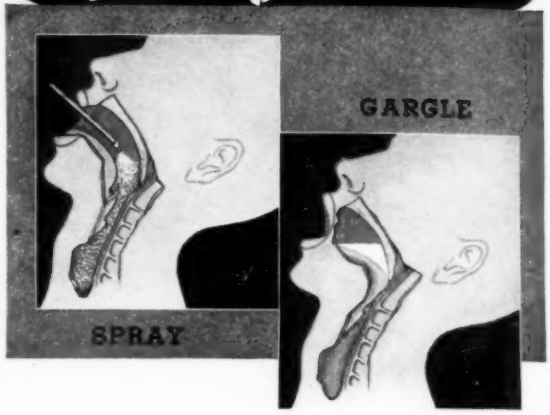
Calmitol's new modern package design fulfills every ethical prescription requirement.

THOS. LEEMING & CO., INC.
101 W. 31st St., New York

Calmitol
LIQUID and OINTMENT

THE DEPENDABLE ANTI-PRURITIC

Pass the Gargle Blockade



WINTER—and you will be called upon to treat hundreds of sore throats. Naturally you want to make sure that any medicament you prescribe reaches the affected areas.

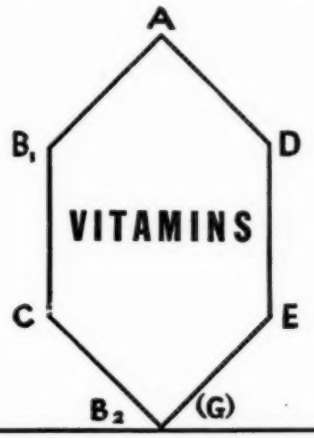
X-rays indicate that a solution, as ordinarily gargled, goes only as far as the entrance to the throat. The process of gargling brings the back of the tongue and soft palate together, closing the throat.

For thorough treatment, you will find it more satisfactory to prescribe the use of an atomizer. There is no blockade—no unnecessary agitation of inflamed membranes. As shown in the above illustrations, based on X-ray research, the throat is open when sprayed and the solution reaches the surfaces not touched by gargling.

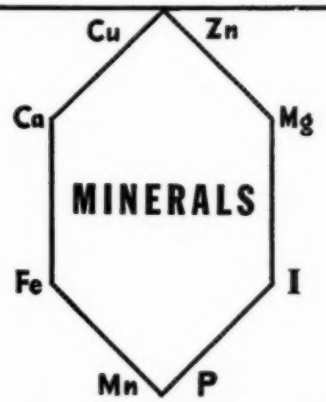
A DeVilbiss Adjustable-Tip Atomizer is most convenient as the spray can be directed either up behind the soft palate, or down into deep-seated areas of the throat.

DEVILBISS

The DeVilbiss Company, Toledo, Ohio, headquarters for atomizers and vaporizers for professional and home use



VI-SYNERAL



WHERE DIAGNOSIS IS DOUBTFUL

Malnutrition

May Be the Root of the Evil

PRESCRIBE

VI-SYNERAL

McLESTER[1] asks, "Is it not possible that a great deal of the vague ill health seen today . . . is produced by marginal diets in which the quotas of minerals and vitamins are grossly suboptimal?" LEAGUE OF NATIONS[2] answers, "The Commission recognizes the fact that the deficiencies of modern diets are usually in the protective foods (foods rich in minerals and vitamins)."

That evasive diagnosis, where you are unable to place your finger on the exact ailment or cause of the patient's ill health, may very well be due to a lack of protective vitamins and minerals, proven inadequate in the average diet.

The original scientific formula of Vi-Syneral, pictured above in symbolic form, was developed after 26 years of vitamin-mineral research by Dr. Casimir Funk and Dr. H. E. Dubin.

Minerals with Vitamins Give Optimal Results

VI-SYNERAL* contains all the definitely recognized vitamins, *fortified with eight essential minerals* because

- . . . vitamins need one another for best results
- . . . minerals are essential to optimal vitamin effectiveness
- . . . vitamin and mineral deficiencies are multiple.

There is a standardized Vi-Syneral potency for every age group. Each box of 50 capsules equals the vitamin and mineral value of hundreds of pounds of fresh vegetables, fruit, milk and other foods.

**Trade Mark Reg. U.S. Pat. Off.*
[1]Southern Medical Jl., August, 1938.
[2]Report of League of Nations Health Committee, Dec. 6, 1935.

Comprehensive Vitamin Manual and Samples Upon Request

U. S. VITAMIN CORPORATION

250 EAST 43rd STREET NEW YORK, N. Y.

MELLIN'S FOOD

Try Mellin's Food First

Seventy-two years ago Mellin's Food was presented to the medical profession and this introduction of the first maltose and dextrins product for the modification of milk was destined to be a long step toward a newer knowledge that gradually evolved into that which is now regarded as the art or science of infant feeding.

During the early years of this period physicians received Mellin's Food with favor and their growing interest soon resulted in a wide recognition of the value of Mellin's Food in preparing nourishment for babies deprived of breast milk.

That Mellin's Food has continued to occupy an outstanding position in the field of pediatrics is convincing evidence that its composition is particularly suitable for the purpose intended and that the theory upon which it was based is consistent with the present-day knowledge of the character and quality of nutrition essential to assure proper growth and development.

Many babies now entering their first year of life will be obliged to subsist on nourishment other than breast milk and it is good practice to try Mellin's Food first, for you have the promise of the same success that has been so pronounced during these more than three score and ten years.

All Mellin's Food mixtures are easily prepared. Bowel movements are usually regular with stools of good consistency. Constipation is rare.

Formulas that meet the generally accepted requirements for protein, fat, carbohydrate and liquid per pound of body weight—with a liberal supply of mineral salts—are arranged on a celluloid card which will be sent to physicians upon request. Samples of Mellin's Food will also be sent if desired.

Mellin's Food Company, Boston, Mass.

MELLIN'S FOOD: Produced by an infusion of Wheat Flour, Wheat Bran and Malted Barley admixed with Potassium Bicarbonate—consisting essentially of Maltose, Dextrins, Proteins and Mineral Salts.

For Acute Coryza

The Rule Of The ARTERY *Is Supreme-*

The following three physiological principles must be observed in treatment:

1. *Increase Arterial Blood Supply*
2. *Increase Venous Drainage*
3. *Increase Lymphatic Movement*

To promote these physiological actions, we suggest PENETRO, with a mutton suet base, which contains from two to three times as much medication as any other nationally sold salve for colds.

PENETRO SALVE FORMULA
Methyl Salicylate, Turpentine, Menthol, Camphor, Thymol, Pine Oil, Mutton Suet Base

R. E. Travers, D. O.
c/o St. Joseph Laboratories
Memphis, Tennessee

Please have my druggist deliver to me without charge samples of Penetro, the salve with a base of old-fashioned mutton suet, for clinical tests.

Druggist.....
Street Address.....
City.....*State*.....
Doctor.....
Street Address.....
City.....*State*.....

Inhalants have their place in treating certain bronchial conditions.

Vapo-Cresolene

(specially prepared cresols of coal tar) a penetrating and sedative antiseptic when vaporized, has demonstrated its value for over half a century for **Whooping Cough,** the dyspnoea of spasmodic **Croup** and bronchial **Asthma,** cough in **Broncho-Pneumonia** and for **Bronchitis.**

ELECTRIC VAPORIZER

LITERATURE ON REQUEST

THE VAPO-CRESOLENE CO.
62 CORTLANDT STREET NEW YORK, N. Y.

LAMP-TYPE VAPORIZER

Name .....
Street .....
Address .....G

PURE VITAMINS

in various forms and dosages

FOR

INFANTS • CHILDREN • ADULTS

EXPERIENCE with vitamin administration has demonstrated that the form easily taken by the adult is not always suitable for the infant or child. Taste, consistency, volume and shape are important factors.

Vitamins A and D and vitamin B_1 are now available in forms and dosages most practical for the age of the patient as well as the condition to be treated.

Winthrop vitamins offer convenience in administration combined with purity and stability of the preparation.

Drisdol in Propylene Glycol—milk-soluble solution—especially adapted for infants.

Drisdol with Vitamin A Capsules—taken with ease by older children and adults.

Betaxin, pure vitamin B_1—available in forms for all ages and for oral as well as parenteral administration. Tablets of various dosages (for prophylactic and therapeutic purposes), palatable elixir, and ampules and vials for injection.

DRISDOL
Reg. U. S. Pat. Off. & Canada
Crystalline Vitamin D_2
IN PROPYLENE GLYCOL

WINTHROP

DRISDOL
Reg. U. S. Pat. Off. & Canada
Crystalline Vitamin D_2
WITH VITAMIN A
Capsules

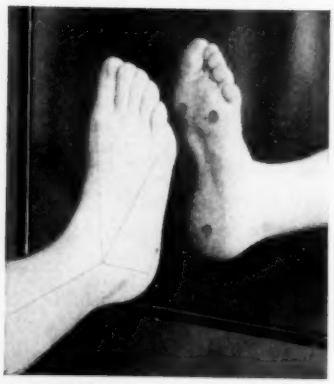
BETAXIN
Reg. U. S. Pat. Off. & Canada
Brand of THIAMIN CHLORIDE
Synthetic Crystalline Vitamin B_1 Hydrochloride

Winthrop Chemical Company, Inc.
Pharmaceuticals of merit for the physician
NEW YORK, N. Y. WINDSOR, ONT.
Factories: Rensselaer, New York—Windsor, Ont.

630M

THE HANDBOOK YOU CAN USE

"WALK-OVER Prescription Footwear"



FOOT STRUCTURE

Causes of Painful Feet, Vocational—Convalescent—and Prenatal Foot Care are all described in this popular guide to Shoe Therapy. Sent free on request. Use coupon below.

BASIC LASTS: 18 men's and women's shoes to supplement your foot treatments. Also chapters on Spring Arch,* Foot Exercise, Posture Control. *REG. U. S. PAT. OFF.

SCIENTIFIC FITTING for width, length, shape and proper balance. Also table of common Foot Lesions and shoes suggested for prescription, based on authentic case records.

SEND FOR YOUR FREE COPY NOW

Foot Health Education Dept. O-10
Geo. E. Keith Company, Campello, Brockton, Mass.

Please send me your free booklet, "Walk-Over Prescription Footwear."

*Name*_____

*Address*_____

The Spinalator REG. U. S. PAT. OFF.

***INCREASES YOUR INCOME**
by increasing your time and permitting a larger practice.

***ATTRACTS PATIENTS and HOLDS THEM**
Patients are for it one hundred per cent.

***SAVES VALUABLE TIME**
because an assistant can operate the machine easily.

***DOES A BETTER JOB**
of mobilizing the spinal joints than you can possibly do by hand alone.

Full particulars on request.

THE SPINALATOR COMPANY
504 Public Service Bldg., ASHEVILLE, N. C.

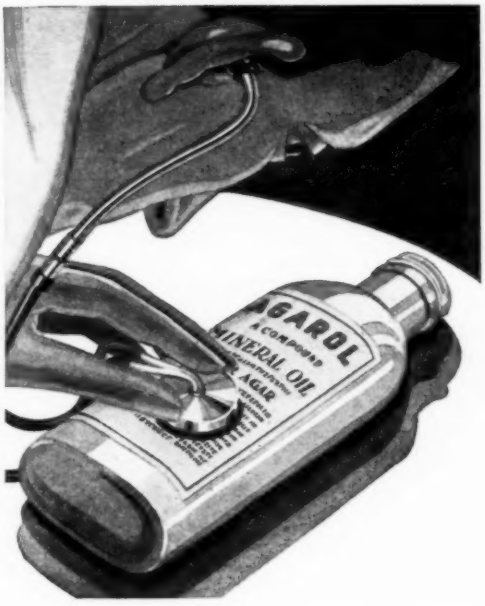
PRE-PROFESSIONAL EDUCATION

The College of Osteopathic Physicians and Surgeons has required two years of pre-osteopathic college work, including specified subjects, since 1936. This standard was adopted as the minimum upon which satisfactory professional education could be builded.

Every student has demonstrated his ability to do college grade work in the sciences before matriculating for the study of osteopathy. The osteopathic curriculum is freed of much elementary work, permitting more clinical training. The student is more mature.

Prospective students of osteopathy with the required pre-professional training should know about the educational facilities of this College. We will be pleased to send them literature.

COLLEGE OF OSTEOPATHIC PHYSICIANS AND SURGEONS
1721 Griffin Ave. Los Angeles, Calif.



AGAROL HAS HAD A PHYSICAL EXAMINATION_

The x-ray says: "Look for uniform density throughout as evidence of soundness"—and Agarol is a thoroughly uniform emulsion that acts the same way with every dose.

The microscope says: "Look for the small uniform oil globules" as a sign of thorough emulsification of Agarol. It means stability, freedom from oiliness, ready miscibility with water, milk, fruit juices or any other liquid.

The pharmacist says: "If it pours freely, it is the sign of a good emulsion." And, indeed, Agarol is a good mineral oil emulsion that has thoroughly proved its value in the relief of acute constipation and in the treatment of habitual constipation.

Ask us for the proof. Descriptive folder and a liberal supply of Agarol is at your disposal, but please write for them on your letterhead.

Agarol is available in 6, 10 and 16 ounce bottles.
The average adult dose is one tablespoonful.

WILLIAM R. WARNER & COMPANY, INC.
113 WEST EIGHTEENTH STREET NEW YORK CITY

AGAROL FOR CONSTIPATION

Processing of Canned Strained Foods by the Shaker Cooking Method Improves Flavor, Color, General Quality

By shortening the time necessary for processing Gerber Strained Foods while they are being cooked in the cans, a definite improvement in quality has been effected. Flavor has been improved, color is fresher, quality is raised in general.

This has been accomplished by the use, since 1934, of shaker cookers. In these cookers, cans of strained foods are shaken along the longitudinal axis at the rate of 140 times a minute. This shaking distributes the heat evenly throughout the thick, heavy mass of strained food in the can. Like stirring a thick cereal in a saucepan, which would otherwise burn on the bottom and remain uncooked on the top, shaker cooking distributes heat evenly, and in doing so shortens cooking time.

Without shaker cooking, in ordinary canning procedure, cans are filled at an elevated temperature, sealed, and placed in retorts for processing at temperatures from 212° to 250° F. for the time determined necessary for each product. Penetration of heat to the center of the contents varies greatly, depending upon the product. Timing is based on heat penetration studies which have been made over a period of years by the National Canner's Association; also two manufacturers of cans, and in our own laboratory.

We knew that because of the slower heat penetration the food resting against the container received more cooking than that in the center of the can. To overcome this, shaker cookers were developed. They proved so successful that factory size shaker cookers were installed. Innoculations with test organisms and other studies were made to determine the necessary sterilizing values.

The net result is a shortening of the time necessary for adequate processing, and improved flavor, fresher color.

* * * *

Free on request: Analyses of mineral and vitamin content of Gerber Strained Foods. Also recent reprints. Gerber Products Co., Dept. 2812, Fremont, Michigan. (In Canada, Gerber's are *grown and packed by* Fine Foods of Canada, Ltd., Tecumseh, Ont.)

Gerber's
BABY FOODS
11 VARIETIES FOR A MORE DIVERSIFIED DIET

APRICOT AND APPLE SAUCE . . . BEETS . . . CARROTS . . . CEREAL . . . GREEN BEANS
LIVER SOUP WITH VEGETABLES . . . PEAS . . . PRUNES . . . SPINACH . . . TOMATOES
VEGETABLE SOUP

SUPPORT the HEART

CACTINA PILLETS, a mild cardiant, will do much to steady and support heart strength. During senility, pregnancy, acute and chronic infections, prescribe

CACTINA PILLETS

NON-TOXIC NON-CUMULATIVE

OD PEACOCK SULTAN CO.
Pharmaceutical Chemists
4500 Parkview St. Louis, Mo.

KEEP NASAL DRAINAGE Open IN HEAD COLDS

Because of the congestion of the nasal mucous membrane, there is a favorable field for infection to the accessory sinuses and middle ear when blockage is prolonged.

PENETRO NOSE DROPS contain ephedrine and other balanced medication to facilitate nasal drainage and reduce swelling of the congested area.

Penetro Nose Drops contain ephedrine in a balanced proportion with menthol, camphor and eucalyptol, in mineral oil.

R. E. Travers, D. O.
c/o St. Joseph Laboratories
Memphis, Tennessee

Please have my druggist deliver to me without charge samples of Penetro Nose Drops, for clinical tests.

Druggist.....
Street Address.....
City..... *State*.....
Doctor.....
Street Address.....
City..... *State*.....

IN SPEEDING GROWTH

It's High Caloric Feeding

PROPERTIES OF KARO

Uniform composition
Well tolerated
Readily digested
Non-fermentable
Chemically dependable
Bacteriologically safe
Hypo-allergenic
Economical

•

COMPOSITION OF KARO

(Dry Basis)

Dextrin	50%
Maltose	23.2%
Dextrose	16%
Sucrose	6%
Invert sugar	4%
Minerals	0.8%

•

KARO EQUIVALENTS

1 oz. vol. ..... 40 grams 120 cals.
1 oz. wt. ..... 28 grams 90 cals.
1 teaspoon ..... 15 cals.
1 tablespoon ... 60 cals.

Growth gains may be accelerated by high caloric feeding. If the total caloric intake exceeds the output the child will gain weight provided the diet is adequate and chronic disturbances are corrected.

When the child fails to gain in weight, high caloric feeding is simplified by reinforcing food with Karo. Every article of diet can be enriched with calories—Karo provides 60 calories per tablespoon.

Infant feeding practice is primarily the concern of the physician, therefore, Karo for infant feeding is advertised to the Medical Profession exclusively.

FREE *to Physicians only:*

Convenient Calculator of Infant Feeding Formulas; accurate, instructive, helpful. On receipt of Physician's prescription blank, giving name and address, the Calculator will be forwarded. Write Corn Products Sales Co., Dept. AO-12, 17 Battery Place, New York, N. Y.

Hundreds of Your Colleagues Have Found the YEAR BOOKS a New, Dependable Help in Practice . . .

Investigate the 1938 Editions NOW

LAST year when we told osteopathic physicians about the YEAR BOOKS for the first time an astonishing number took advantage of our 10-day examination offer to look over these standard handbooks of medical progress. The fact that hundreds purchased one or more books indicates that the new ideas and improved methods described in them have direct application in your type of practice. The 1938 editions are coming from the press. Now—while they are most timely—see how much **useful information** the new YEAR BOOKS have to offer **you.**

YEAR BOOKS are known everywhere as "The Lowest Priced First Rate Works of Their Kind"

Workable New Ideas

On the coupon below you will find the titles of the 11 volumes of the 1938 YEAR BOOK series. Each of these books contains—**in concise, easy-to-read form**—from 300 to 700 of the most significant and practical articles in that field which appeared during the year in scientific publications here and abroad. You can be sure that **only important contributions** representing real advances are included because selections are made personally by the editors—men of national and international reputation (see coupon) whose judgment you can trust.

Invaluable Editorial Comments

Not only do the YEAR BOOKS bring you all the latest developments and newest proved ideas from all over the world. . . . They also give you the benefit of the personal opinions of the editors. The straight-to-the-point comments of these outstanding clinicians are added in separate paragraphs directly after hundreds of articles.

Reading the YEAR BOOKS is the next best thing to attending a clinic conducted by the leaders who are the editors.

Fully Illustrated

The practical usefulness of the YEAR BOOKS is further enhanced because illustrations, selected by the editors, are used generously, and most of them show how something is done. Several of the volumes contain beautifully reproduced colored illustrations. Every book is comprehensively indexed by subjects and authors.

Sent on 10 Days' Approval

Why wait longer to profit by the workable new ideas that the YEAR BOOKS will bring you at such modest cost? Fill in the coupon below, and we will send any or all of the new volumes, postpaid, on **10 days' approval** so that you may see exactly how valuable they will be to you. The coupon is not an order and does not obligate you to buy. So use it **now** and **be sure** you are not overlooking something that will help you in your practice.

CHECK THE BOOKS YOU WANT TO SEE

A.O.A. 18

THE YEAR BOOK PUBLISHERS, Inc., 304 S. Dearborn Street, Chicago

Gentlemen: You may send me, postpaid, the 1938 editions checked below. If I decide not to retain them I will return them at the end of 10 days. Otherwise I will send you my check for the indicated prices at my convenience within 30 days.

☐ **GENERAL MEDICINE,** edited by Dick, Amberson, Minot & Castle, Stroud and Esterman. 840 pages. **Ready Now** — **$3.00**

☐ **GENERAL SURGERY,** edited by Graham, over 800 pages. Ready this month — **$3.00**

☐ **GENERAL THERAPEUTICS,** edited by Fantus, about 450 pages — **$2.50**

☐ **OBSTETRICS & GYNECOLOGY,** edited by DeLee and Greenhill, about 700 pages — **$2.50**

☐ **PEDIATRICS,** edited by Abt, about 550 pages — **$2.50**

☐ **RADIOLOGY,** edited by Waters and Kaplan, 504 pages. 550 illustrations. **Ready Now** — **$4.50**

☐ **EYE, EAR, NOSE & THROAT,** edited by Brown & Bothman and Crowe, about 625 pages — **$2.50**

☐ **COMPLETE SET** (Send discount and terms.)

☐ **NEUROLOGY, PSYCHIATRY & ENDOCRINOLOGY** edited by Reese, Paskind and Sevringhaus, about 700 pages — **$3.00**

☐ **DERMATOLOGY & SYPHILOLOGY,** edited by Wise and Sulzberger, about 725 pages — **$3.00**

☐ **UROLOGY,** edited by Cunningham, about 450 pages — **$2.50**

☐ **PHYSICAL THERAPY,** edited by Kovács, 486 pages. **Ready Now** — **$2.50**

☐ **ENDOCRINE THERAPY,** by Sevringhaus (not a Year Book). **Ready Now** — **$2.75**

Doctor *(Please print)*_____

Address_____

The Journal of the American Osteopathic Association

PUBLISHED MONTHLY BY THE AMERICAN OSTEOPATHIC ASSOCIATION

Vol. 38, No. 4 | 540 N. Michigan Ave., Chicago, Ill. | December, 1938

COPYRIGHT, 1938, BY AMERICAN OSTEOPATHIC ASSOCIATION

Mechanical Control of Posture*

CARTER HARRISON DOWNING, M.D., D.O.

San Francisco, Calif.

That postural mechanisms have a vital influence upon health is a commonly recognized fact; the extent and complexity of this influence, however, are by no means charted. The field has been surveyed only around the edges, leaving most of it virgin territory for inexhaustible scientific study. The very intricacies of everyday environment, as they have bearing upon the human organism, are far beyond concise intellectual interpretation. Try as we may, we can hope to attain only the relative and never the absolute; nonetheless the possibilities are alluring. I am persuaded that *to know posture in its entirety* would be to have the Rosetta stone to mankind's early story and the prescription for man's future physical welfare. Lacking such ready-made key, patient research is essential to solve the veiled problems of postural origin.

In the processes of biophysics there appears no beginning and certainly no end—since all human bodily mechanisms and systems are in some measure influenced and controlled by, or correlated to, the erect position. Yet, by faithfully increasing our knowledge of postural mechanisms, we shall undoubtedly achieve a far better understanding than we now have of many expressions within the body of the vital forces of life. In any of our research it must not be forgotten that *the body is an organic unit*, being an aggregate of intricate, interdependent organs all in a delicate state of morphological and physiological balance, and that none of the component parts of such an organized being can be modified without other parts being affected by reason of the intimate functions and relationships which exist between its constituents.

POSTURE DEFINED

Broadly considered, posture reflects the continuous dynamic attempt of the body to meet under all conditions the impositions of the elemental force of gravity.

No single, specific position can be designated as *normal* posture, in that *normal* is a state variable with, and dependent upon, individual physiologic accommodation to the elemental force of gravity. Nonetheless, the need remains to attain a maximum of efficiency and comfort with a minimum of strain and expenditure of energy. In view of these facts, correct posture—more often called *normal posture*—becomes that position, assumed with regard to gravity, which contributes most toward structural and physiologic harmony and toward coordination of detailed functions within the unit organism.[1]

Asymmetry is the rule, not the exception, in all growing things—man included. Within the seed of the human is recorded the past history of all the growth, impulses, tendencies, and characteristics of his progenitors which tend to inheritable imperfection. Furthermore, structural and physiologic modifications and accommodations are forced upon the organism by the exacting and incidentally designing forces of environment. Accordingly, the postural behavior of any one organism is distinctly individualistic and it is never identical in any two beings. In the paired halves of any one body exist such morphologic and physiologic variations as preclude the possibility of perfect postural equilibriums or absolute body-balance. Posture is physiologic and, as such, is in a continuous state of motion or flux. It is, therefore, not measurable in terms of static behavior.

Posture is a complex variable expressed in continuous adjustment and readjustment of all the dynamic forces of the body. The many mechanisms involved in equilibrium and balance, including those of compensation and complementation, are all correlated to meet final physiologic necessity. So, if these mechanisms resolve themselves into a common denominator —namely, postural behavior—a decompensation in posture becomes a relative deficit in body balance or equilibrium because the product of these dynamic forces *expressed* is their physiologic end result. If we can measure this functional state, we cut through the complexities of our therapeutic problem.

Having freely acknowledged that the intricacies of postural operation within the human organism would defy complete measurement even by the mathematical genius of an Einstein, and that the architectural stresses and strains would baffle the engineering abilities of a Strauss, we can simplify the task before us only by employing as a basis for corrective procedures certain resultants of physiologic law.

Before the Eastern Osteopathic Association convention in 1936, I said:

We have long needed some standard of precise and delicate measurement whereby to gauge accurately the dynamics [postural mechanisms] of the human body; to determine more definitely the actual working mechanisms under

*Delivered before the Technic Section at the Forty-Second Annual Convention of the American Osteopathic Association, Cincinnati, July, 1938.

specific conditions. Neither clinical nor radiographic methods interpret physiologic conditions in terms of dynamic measurements.

During the past year the use of a new method of research has added definition to earlier conjecture regarding equilibrium and balance. More than 600 cases [the figure has now reached 4,000] have been examined for the purpose of analyzing postural defects and interpreting their effects in terms of orthodynamic imbalance; and to find, if possible, better methods of establishing relatively normal physiologic equilibriums.

In the furtherance of this work an instrument of precision, known as the Robalin [Posturchek] has proved invaluable; with it the force of gravity—as transmitted through the body and carried into the feet—is picked up by a plurality of platforms, each of which has a weight indicator. All components of weight-thrust are registered for respective weight-bearing points of the feet and comparative findings established. From these values all forms of disturbance of equilibrium—lateral, anteroposterior, torsional, or combinations thereof—can be classified and appraised. This mechanical method is a signal achievement providing, as it does, a standard of measurement for accurate determinations in [physiologic mechanisms of] dynamic posture. With this instrument of precision we are able to interpret, in scientific terms of weight-measurement, normal distribution as against [habitual] deflection of the force of gravity.

Standing Film.—Gravitational burden forces the feet to become a primary base plane and the superstructure must act in accordance with, and assume a compensatory postural equilibrium to, them. We must not lose sight of the simple mechanical fact that motion creates moments of structural- and weight-displacement from this base—the feet. Measured variations as shown by "standing films" of iliac crests, femur tops or sacral base planes have been accepted by many, quite erroneously, as the true metric index of the structural defection present. The amount of lift or other correction is prescribed in accordance with this kind of myopic calculation and without consideration of the moments of displacement from the base plane or of factors of compensation which apply in the individual case. Such procedure is fraught with the danger of overcorrection and the probable breakdown of an otherwise compensated postural machine.

By "moments" mechanically we mean that tendency or measure of tendency to produce motion displacement above a point or axis. It is measured in general by the product of a mass, force, velocity or the like into a perpendicular distance from or to the point or axis. In this instance, as we wish to apply it to postural mechanics, the axis would be the feet because of the gravitational burden imposed. By "moments of weight-displacement" we refer to the tendency of motion to produce displacement of weight above a given point or axis. This mechanical movement is measured in general by the degree the weight shifts from a given perpendicular distance—to or from its specific point or axis.

Structural displacement might be designated as the difference between the initial position of a moving body and a later position. "Moment of structural displacement" of a moving body can be calculated in measurement by the deviation in structural shift from a given point to a stated perpendicular from an initial point or axis.

But we cannot approach the therapeutic problem exclusively on a basis of exact mathematical correction. It is essential that we ascertain the point of compromise between compensation and structurophysiologic faults which fuse and ultimately reduce to disturbances in postural balance. If the best symptomatic effects are to be obtained for the patient, correction must be established to meet final physiologic demand.

Although the x-ray cannot give us information essential to a physiologic solution, it remains an invaluable aid. As a diagnostic adjuvant, it affords concrete visual evidence of structural defections, anomalies, and pathologies.

Mechanical Significance of Gravity.—Gravity is unremitting and one of the most compelling and continuous of all environmental influences in the biologic progression of man. The demands of gravitation have required progressive organic and physiologic adaptability in human beings. Innumerable mechanical adjustments and functional accommodations are concerned in the constant struggle of the organism to meet the action of gravity. Whenever man is unable to compensate its elemental and inexorable influence satisfactorily, somewhere, somehow, man suffers. The readily recognized failures in this field—abnormal wear, pressure, stress, strain and tension—in their turn incite complex secondary alterations of structural and functional relationships. In postural mechanics the physician meets no greater adversary than gravity. Therefore, the coordination of the individual to his best physiologic advantage in relation to this ever-present force is a fundamental necessity. The physician must accept this governing influence in postural mechanics in order to render scientific, accurate and practical application of postural therapy. It is the bedrock of correction for all structural and physiologic perversions.

Acute trauma (blows, etc.) and violent stresses and strains are obvious extrinsic causes of structural and physiologic impairment. However, it is easy to overlook underlying mechanical influences which are inherent in the body mechanic. Loosely, causes of postural disorders may be classified as follows:

Accidental: where postural involvement is directly secondary to some mechanical injury or other trauma.

Functional: impairment due to faulty habits of posture, occupational stress, etc.

Organic: those in which the postural results are an attempted adaptation to inherent organic factors.

Any or all may contribute to group or segmental perversion in the human spine.

It is gratifying to know of the keen interest our profession is taking in the possibilities of postural mechanics and as evidence I want to brief some correspondence of the past year with one of our "posture-conscious" colleagues.

Since returning to my practice, I am visualizing my patients through the postural spectacles you have adjusted to me, and am more than ever encountering those I feel would be amenable to postural correction. I appreciate more than before that "Old Man Gravity" is a paramount consideration in relation to postural problems and was born at least two or three days before the first physician. For some years I have been trying to create balanced posture through the use of lifts, et cetera, because I felt the mechanical lesions I attempted to correct were apt to recur due to postural imbalances. My corrections were based simply on clinical judgment and not upon any method of precise or accurate calculation. I felt that muscle tonicities were improved and muscle strains and stresses relatively

reduced where postural correction served to retain osseous structures in their proper alignments. I believe nervous and physical fatigue may be an outstanding symptom of postural failure and evidence of a losing fight with "Old Man Gravity." This far-reaching influence must eventually involve even cellular metabolism. There is great opportunity for real study here! Its ultimate effects on cellular physiology through more remote functional effects—nervous, chemical, hormonic, circulatory, etc.—are infinite.

Today we recognize deficiencies (mineral, vitamin, glandular . . .), mechanical defects, toxins, and infections as basic causes of disease. No doubt they are all contributive and closely intertwined. I begin to wonder: is a posturally imbalanced individual more liable to metabolic disorders or infection than one who is fairly balanced?[2]

In partial answer to this query, it may be said that fatigue alters cellular chemistry and as it involves the nutritive functions of the cell—which functions are practically analogous to those of immunity—postural fatigue may serve to lower the immunological functions and thereby act as a precursor of infection. Wise precaution will place every ambulatory patient upon an even keel, regardless of the nature of his trouble.

Do we fully grasp the significance of the terms *compensation* and *decompensation?* A compensated heart with organic defects may function very well. An acute functional shift may incite immediate decompensation and sudden death. The pancreas may take up the functional shortcomings of the stomach; a lumbar scoliosis may absorb the mechanical stresses of primary iliosacral or lumbosacral strain.[3]

Satisfactory mechanical compensations exist in cases of gross architectural deformity, and decompensations may exist where apparent deformities are negligible, it is true. To disrupt the former by mechanical means would be a therapeutic mistake. It is non- or decompensated body mechanics which is at the bottom of our need for an adequate system of postural therapy.

It has long been my contention that direct force, or a blow, although it may produce local contusion, is not as common a cause of mechanical lesions as the innumerable torsions, stresses and strains to which the body is regularly subjected. Lesions may be brought about by reason of chronic postural conditions as well as other mechanical incidents.

The more I ruminate over my visit with you, the greater becomes the magnitude of postural mechanics and the wider becomes the therapeutic horizon.[2]

Posture of the Adolescent.—Unhampered, the living principle in all organisms tends toward the development and maintenance of the largest, strongest, and most productive life possible of its kind. Exceptions apparently are incidental to those progressive reactions forced upon the organism by unremitting changes of environment. The test of an organism's right to continued life or health rests in the organism's ability to meet environment equably. "Normal" varies with every person and the so-called normal individual is able to withstand much that is "abnormal" through the vital forces of recuperation, adaptation, and compensation. However, there is a limit to the margin of safety and to the zones of structural and functional variation beyond which sickness or disease must be the inevitable result. Reduced to fundamentals, disease is life functioning under altered conditions, or vital processes operating abnormally.

During the developmental and formative years of childhood and adolescence, the observant physician can accomplish the greatest good for, trite but true, "as the twig is bent, the tree's inclined." Correction of defective posture early in life may lay the foundation for health and be the means of preventing insidious disease in later decades. Ernest Hooten, the noted anthropologist, tells us that our profession is guilty of shortsightedness in therapeutics when we fail to reason from the cradle forward rather than from the morgue backward. We cannot disregard functional disturbances in their own right or in their implication—for there is no particular or perceptible dividing line between functional errors and the onset of actual disease. The astute physician seeks to correct physiologic or structural faults which might hamper a child's welfare and possibly lead to a real disability. Outside the physician's office our schools and colleges should—and many of them do—give serious consideration to the physical qualities and eccentricities of the growing child. Correction of basic faults may predetermine development of a healthy body, an active intellect, and a reasonable psychology.

Proper relation of structural and functional integrities of the body as a unit is more intimately associated with the posture of an individual than any other single factor. Faulty postures may set up a host of disorders apparently disassociated; functional disturbances are inevitable and may be as disparate as errors in vision and a broken metatarsus. Where posture is faulty, general tone and physical make-up are usually substandard; the child may be underweight and poorly developed. Malnutrition, chronic fatigue of nervous and muscular systems, congestive disturbances and circulatory vagaries, mechanical retardations in somatic functions, diminished respiratory activities and interference with heart action, derangement of visceral functions and pelvic organs, may be attributable to postural disorders. Inadequate body mechanics sap the vital energies of the child, diminishing reserve for proper development. In such instances, whether behavior is characterized by nervous irritability or lassitude, scholastic record is usually poor.

An appalling percentage of adolescents present varying grades of spinal curvature and postural defects. It is deplorable that basic correction of these conditions is not initiated in early life. During this period plastic osseous tissues are easily moulded by physical imposition into designs which in maturity lead to confirmed architectural or structural modifications (an adaptation from Wolff's law). Growth inequalities in the lower extremities, variations in sacral base planes, and structural anomalies of the fifth lumbar are exceedingly common incidents. Careful observation leads to the belief that the outstanding cause of curvature is mechanical and that it usually is induced by an attempt to accommodate to some basal defect. I say this with full knowledge of the fact that the mechanical compensation may be directly incited by some underlying factor of real pathology.

In this connection I believe there is probably no greater boon to the development of a healthy and more vigorous young America than lies in the preventive and corrective fields of postural medicine.

Body Mechanics.—From a purely mechanistic standpoint, all parts of a machine must be considered both separately and as an assemblage. As a part affects the collective whole, so must it be affected by the whole. Mechanical science treats of the action and relations of all forces—whether in solid, liquid, or gaseous state—and in abstract form leads us into time, space, actions, and reactions, relations and inter-

relations. Unquestionably most complex and subtle mechanical equations enter into the postural picture.

In "Osteopathy, Research and Practice," Still writes:

> The mechanical principles upon which osteopathy is based are as old as the universe. . . . As I was an educated engineer of five years' schooling, I began to look at the human framework as a machine and examine all its parts to see if I could find any variations from the truly normal. . . . I began to experiment with man's body as a master mechanic . . .[3]

Still saw in spinal perversion a prime causal factor of disease because it commonly interferes with the so-called normal operation of the body. He did not depreciate his recognition of this fact by excessive emphasis of it. He realized that a cog (working part of the body-machine) had gone wrong. Surely no true mechanic or engineer would look to the part to the exclusion of the assembly. Why concentrate upon a spinal segment the structurophysiologic difficulties of which could arise from some cause entirely outside of its small realm? Scientifically we cannot afford to ride a hobbyhorse continuously, that is, complacently confine our orbit to consideration of a circumscribed part. Let us give to the human body, as a mechanistic unit, the inclusive deliberation a thorough mechanical engineer applies to his technical problems. This broader approach to the importance of body mechanics does not discount the spinal lesion.

Spinal and Pelvic Mechanics.—The original mechanism of the spine is evidenced in the single total curve of the embryo and of the newborn. The cervical and lumbar curves are a physiologic adaptation to bipedism. However, the transition from a single posteroanterior curve to a multiple curved rod with superincumbent weight in a vertical plane opens the way to added variations in functional behavior, since —although a flexible straight rod can be bent either anteroposteriorly or laterally without torsion — a curved rod cannot be bent laterally without twisting or torsion inasmuch as it first rotates about its long axis and is thus curved in one plane and sidebent in another. Visualizing only the static behavior of a flexible curved rod under superincumbent weight, it would seem that unopposed curvature in the human would be the rule rather than the exception.

The articular processes direct and confine movements of the vertebrarium in a specific manner, assist in bearing the superincumbent weight of the body, and endow the spine with a capacity for controlled movement by muscular agency. Sidebending and rotation are invariably combined physiologic movements and muscular action is directed by the inclined planes of the articular facets. Furthermore, we observe that sidebending and rotation in one direction involve synergetic muscular actions and are opposed to sidebending and rotation in the opposite direction. Equalized opposition of tonicities in muscular agencies serve to maintain the spine in the normally erect position and are inherent physiomechanic protections to offset static imposition and to preserve alignment of the component segments of the vertical column. Aided by the mechanical influence of the articular facets, opposition to the force of gravity is continuous. It is obvious that any excessive degree of rotation of the bodies of the vertebrae to the convexity of a lateral spinal curve would be contrary to the protective physiologic and anatomical factors essential to maintenance of spinal integrity

There are many types and gradations of curvature found in man. We may recognize their presence and have a general understanding of origin and still lack knowledge of the mechanical subtleties of specific cause and effect. The finer details of spinal mechanics—adjustabilities and compensations—as they apply to group or segmental areas of the spine, offer an unlimited field for research. We observe and classify single total curvatures, transitional or functional forms of scoliosis with typical *S* curve but no apparent organic change, various grades and types of organic scoliosis, and yet we may be but vaguely aware of the specific physiologic mechanics entailed in individual behavior.

Normal sidebending and rotation are inseparable and complementary movements. A confirmed disruption of lateral equilibrium must involve its rotational complement. In such instance complex movements of the spine introduce a factor of motion which is not normal rotation but rather a torsional resultant—a type of mechanical action which the spine is probably least adapted to withstand safely. I prefer to think of confirmed spinal torsion as evidence of a broken or disrupted physiologic mechanism—the motor mechanics of which are provocative of great strain and stress; the lesioning capacities of which are great. There is a long road ahead before we can perfect our conception of multiple spinal mechanics as they may concern the proper management of cases of spinal disorder.

Pelvic Equilibrium.—To sustain the horizontal axis of motion of the sacrum (second sacral segment), in the change from quadrupedism to bipedism, has necessitated pelvic adaptation and great adjustment in the lumbar spine (lumbar curve). The sacroiliac articulations have definitely limited movement, yet motion is present in ratio to their anatomic index. They possess definite stability and yet mobility within the range of accepted normal conduct. The sacrum rests between the two ilia like a double keystone which is wider both in front than behind and above than below. It presents the characteristics of an inverted wedge and its articular surfaces are too vertically disposed to satisfy the demands of weight-bearing. Consequently, upon the posterior sacroiliac ligaments falls the functions of sacral suspension. These ligaments have an area of insertion greater than that of the joint cavities and their deepest attachments are extremely limiting to joint function. They do, however, provide sufficient motion to the pelvis to assure pelvic elasticity.

The sacrum forms the summit of weight-bearing of the posterior pelvic arch and, because of the curvature of the lumbar spine, body-load is deflected in two directions. One component of force drives the sacrum down and back, bringing into service the anatomical base-apex wedge of the sacrum (which locking effect is further intensified by the sacroiliac and lumbosacral ligaments), while the other resultant thrusts the forward end of the sacrum downward, resisted by the check-action of the sacrosciatic ligaments. It is significant mechanically that the double-wedged formation of the sacrum affords maximum bony interlocking and ligamentous check of the pelvic structures when weight is superimposed, as in the erect position. All weight transmitted from above down must be computed through the mechanism of the lumbar curve. The lumbar spine and the pelvis are dual structures acting as an integrated mechanism,

which fact must be borne in mind in estimating mechanical interactions and effects. Reciprocal in a physiologic sense, they possess great compensatory values one to the other.

The sacrum is physiologically adapted to undergo moderate flexion and extension and is not naturally endowed with the capacity for any considerable rotary movement between the innominates. With the lumbar curve obliterated by flexion, the sacrum automatically becomes more vertically disposed or aligned with the lumbar spine and a functional interlocking occurs. If, then, rotation is attempted, a vertical axis (sacral) is introduced with slight torsional and rotary action of the sacrum. Under this particular type of movement occur the majority of mechanical strains of the sacroiliac.

Obviously, both sacroiliac articulations may act synchronously (bilateral transverse sacral axis) or one may act individually (unilateral transverse sacral axis). Both innominates cannot move simultaneously with rotary movement in diverse directions without sacral intermediation. If the innominate on one side rotates to its limit, movement on the opposite side is sacral and in the same direction upon the innominate. Still the impression is given that the opposite innominate has actively rotated in the opposite direction. The rigid pubic levers and relatively immobile symphysis preclude any definite vertical shift. However, a lateral shift of the symphysis is a phenomenon commonly seen in x-ray of mechanical pelvic disorder.

The two auricular segments of the sacrum convert the sacroiliac articulation, in a restricted sense, into a double-compartment joint, each presenting somewhat the characteristics of an extremely shallow ball and socket joint. This does not prohibit full arthrodial movement of the point in toto.

The deep fibers of the sacroiliac ligaments apply to each segment in such manner that it appears that the joint possesses, in a rudimentary way, not only a double auricular but also a double suspension (fulcrum) mechanism. Accommodation to many shifts of position of the pelvis undoubtedly enforces corresponding action in intra-articular and ligamentous mechanics. It is probable that one auricular segment can by compression act as a pivotal joint, or axis, for an arc of movements of the other member where physiologic accommodation demands such mechanical operation (oblique vertical and transverse axes of movement).

Physiologic integrity of the pelvis and of equilibrium may be disrupted by diverse factors, organic or functional. Needless to say reestablishment of pelvic equilibrium is of paramount importance since the pelvis is a key structure. Again, pelvic torsion along with eccentricities of motion may act as a basic cause of low-back disorders.

Chronic and recurrent sacroiliac and lumbosacral strains are typical complications. Although no accurate estimate is available, it is safe to say a large percentage of sufferers from these disorders present an underlying postural defect. A confirmed pelvic imbalance may initiate such low-grade mechanical disturbances as to remain practically symptomless for years and thus escape detection until the advent of some exciting strain or serious injury. But if physiologic resistance is once disrupted, the latent postural defect is likely to assert itself and prevent recovery unless pelvic equilibrium is established by mechanical means.

Mechanical Control of Posture.—The establishment of proper bodily equilibriums is the first purpose in all corrective procedure. Application of the mechanical principle can vary only in degree or complexity. The feet are weight-receiving organs and their manner of accepting the body weight is significant. With the body in an erect position, if the feet do not receive a balanced and rightly proportioned weight thrust upon their various points of bearing, there is either local pathology or a disturbance of body balance proper; in the latter instance one or more of the postural equilibriums are involved. Body balance (weight distribution) and pedal balance (weight reception) are in a sense synonymous; action is automatic and reciprocal.

In the accepted normal posture, body balance is sustained with a minimum flow of energy. Stability is accomplished by structural arrangements and positions, ligamentous supports and muscle tonicities. The feet are the primary bases of support and under body weight naturally assume specific functional positions. Therefore, the feet must be considered not only the fixed structures for gravitational burden but also the fundamental axes for dynamic postural adjustments. Postural stability must depend upon the position of center of body weight in relation to the feet as basal structures. The most effective means for correcting faulty body balance is artificial change of one or more base planes to mechanically offset the postural default. Specific prescription can be determined accurately by exact measurements of distribution of body weight and the requirements determined therefrom (lifts, wedges, etc.) can then be built into the shoe. Proper body equilibriums are reasonably assured when pedal equilibration is established—as evidenced by proportionate weight thrust upon the several weight-bearing points of the feet.

Organic scoliosis should be approached with caution, as the condition in itself indicates partial compensation already made. In cases of anatomical short leg, presenting single total curvature compensation with excessive weight load carried to the long leg, it has been found that correction which establishes the best physiologic equilibrium most nearly approaches the structural equation. In moderate scoliosis, the lateral deflection of weight load to the long leg is decreased and the line of gravity corresponds more closely to the median line. Such compensation necessitates a less degree of correction to establish physiologic equilibrium. Again there is another type of scoliosis in which compensation is so nearly complete that the line of gravity falls practically in the midline (it is deflected to neither side), and these cases are usually symptomless. It is not advisable to upset the equilibrium thus established.

In marked scoliosis with notable sidesway of pelvis, instances have been found where the lateral deflection of weight load was actually to the short side (unusual phenomenon), and attainment of the best physiological equilibrium required only a fraction of the lift mathematically indicated to approach the structural necessity. Overcorrection of this type of scoliosis will markedly disturb equilibrium, and is a mistake easily made.

Method or Use of Posturchek.—There is a wide

range of variance between individual stances as stated in a former article:

The instrument [Posturchek] provides two movable platforms adjustable to the habitual stance of anyone. Separation between the feet depends to a great extent upon the height and size of the person. The average outflare is about twenty-five degrees. This is not constant—some individuals may demonstrate an actual inflare of feet in standing.

Each of the platforms of the Posturchek is divided into four segments which register on separate weight indicators. Three plates are used for study of weight reception under the metatarsal arch (metatarsal heads) and one plate for registration of heel thrust. Tests have been made with and without shoes. In standing, an approximate 60 per cent of weight load is carried by the heel, though it may go as low as 50 per cent in apparently normal adult feet. This leaves 40 to 50 per cent to be carried by the metatarsal heads. The medial longitudinal arch in standing accepts through the head of the first metatarsal, through its double contacts (sesamoids), and to a lesser degree the second metatarsal head, about 10 to 15 of an approximate 40 per cent of total weight thrust. The lateral arch accepts through the heads of the . . . fourth, and fifth metatarsals an approximate 25 to 30 per cent. Therefore, the ratio here can be estimated [variously] between 2 to 1 and 3 to 1. In normal adult feet the [third] metatarsal has been found to assume very little weight-thrust. [It becomes a major point of weight bearing only when the metatarsal arch is broken.]

Since the arches are not present at birth but develop solely through locomotion, their gradual maturity is accomplished by progressive changes from weight-bearing. Children with flexible posterior musculature and immature arches may carry as much as 70 per cent of body weight on the heel and the forefoot receive 30 per cent. As between the medial and lateral sections (metatarsals), the ratios of weight bearing may vary from 2 to 1 to 1 to 1.

In anteroposterior equilibrium a vertical line passing through the center of gravity of the body must fall within its base of support, and maximum stability is assured if it falls midway between the anterior and posterior pillars of the foot. This . . . is the talonavicular joint, which is the highest level on the arch immediately in front of the ankle joint from which the weight is deflected to the heads of the metatarsals and calcaneus—anteriorly and posteriorly, respectively . . .

The center line of gravity falls midway between the ankles of the two feet in lateral equilibrium. The fact that there are two points of support assures increased stability. In standing, the weight is transmitted from the promontory of the sacrum to the femorosacral arches with some deflection through the posterior sacroiliac ligaments to the hip joint. It then passes downward through the long bones of the legs to the talus.

A disturbance in lateral equilibrium appears in any condition or group of conditions which disrupts paired structural or physiologic relations. . . . The most common example is anatomical short leg. . . . A lateral deflection of equilibrium is accompanied by [complementary rotation], or torsion.[4]

Rotation of the entire pelvis is largely accomplished by the hip joints and lumbar spine, more particularly in the lumbosacral articulation. Rotation occurs around a vertical line drawn from a point slightly in front of the promontory of the sacrum through a point slightly behind the symphysis (center of motion).

In the typical case with unequal anatomic leg lengths, the lateral swerve of the lumbar spine is to the long side and gravity is correspondingly deflected. Since the line of gravity also passes posterior to the center of motion of the hip joint, added weight impact on this articulation, alongside causes upward, backward rotation of the ilium (posterior innominate), *but a forward arc or swing of movement of the pelvis en masse on that side.* Conversely on the side of the short leg the tuberosity of the ischium tends to rotate upward and backward and the ilium forward and downward (anterior innominate), *with a backward arc or sway of movement of the pelvis as a whole.*

Although sidebending of the lumbar spine is toward the side of the long leg, the tendencies of rotation are toward the opposite. Lying on the back, the anatomical long leg often appears shorter and the actual short leg assumes a relatively lengthened position. This is caused by shift in position of pelvic structures and presence of contractural muscle states unopposed by gravity.

Of the various combination of wedges and lifts employed in postural corrections, the simplest form is the single total lift used to offset short leg. This may be insufficient in disrupted lateral equilibrium with marked lateral pelvic sway, in which instance the addition of an inside longitudinal wedge is indicated on the long-leg side. If marked torsion is evidenced the single total lift (short-leg side) is supplemented by the pivotal or breast wedge (long-leg side) to eliminate the torsion. The chief use of the breast wedge is to control anteroposterior equilibrium (forward deflection). It consists of a transverse wedge built across the forepart of the heel. Backward deflection is rare, but when found demands the use of higher heels.

These are merely general rules for mechanical correction of faulty equilibriums as commonly found —lateral, anteroposterior, torsional, or combinations thereof. Since there are deviations in the application of any principle, no fixed postulates of procedure are offered.

Necessity for Research.—Academic theory, philosophic appreciation, scientific evidence and practical usage all are represented in the basic concepts of the healing art. Science never unfolds as a succession of facts for, as Pasteur said: "Without theory, practice is but routine born of habit; theory alone can bring forth and develop the spirit of invention." Theoretic or false distinctions between groups on individual points of view must fall before the necessity for reconciliation of opposites in theory and practice as greater knowledge is attained. True science must question even apparent certainties and subpoena all before the judgment seat of rationalism. Professing faith in clinical theory, we may still fail to comprehend the need for concrete elaboration of fundamental principles in real science. Hippocrates first warned us that "to know is one thing, merely to believe is another; to *know* is science, but merely to believe one knows is ignorance." It must be remembered that fact is never isolated and that evidence seemingly sound may be displaced or altered by the added knowledge of tomorrow, which day in turn reduces relative error and adds to relative knowledge.

No particular school can claim a special birthright or resent the invasion of what it may fatuously consider a proprietary sphere. There is no special dispensation, except to be placed in position to take advantage of opportunity. Professional inertia means ultimate oblivion. There is no place for apathetic attitudes toward scientific achievement; no room for blind acceptance of tradition or "opinions of the day". Without eternally seeking, we fail to fulfill our professional destiny, which is our responsibility. There

is no single phase of medical art but still remains beyond absolute definition. Although one may contribute something to the changing array of science, he must realize in all humility that it is only one more stepping stone of which there have been many in the development of that science. The constant expansion of all sciences counsels us to hold all opinions and decisions in abeyance to the continuous unfoldment of factual knowledge.

It is a human weakness to think the other fellow's pasture may be a little greener than one's own and human beings, like perverse mules, literally have their heads stuck through the fence to compare notes, worrying and wondering if the verdure may not be a bit greener "over there". After all, one's own problem is one's chief concern, and it should be patent that watching the other chap too closely is a nonproductive pastime and a dangerous distraction. Because Still may have advanced or emphasized certain principles and phases of medicine does not signify that his vision of the medical arts as a whole was a shriveled cultism rather than a virile and untrammeled perspective of organic relationships. As far as his contemporaries are concerned, we may well say, "woe to him who teaches man faster than he can learn! Has he not denied the gods?"

What have *we* added to Still's original therapeutic ideas? What have we accomplished in concrete, scientific elaboration of his fundamental principles? Do we lack the vital initiative for such laborious effort? To project the Stillian principles which will ultimately blend themselves into practically every phase of therapeutic problems will tax our greatest capacities.

Even in the field of posture, let me state in conclusion that the multiple complexities of its biophysical operations in the unit organism are infinitely beyond ultimate analysis. Its cyclic relationships and interrelationships would carry us on to infinity. All are inextricably interwoven into the operations of organic continuity and function.

693 Sutter St.

REFERENCES

1. Downing, Carter Harrison: The Orthodynamics of Posture. Jour. Am. Osteo. Assn., 1936 (May) 35:405-414.
2. Farmer, Frank: Personal Communication.
3. Still, A. T.: Osteopathy; Research and Practice. Preface p. vi. The Journal Printing Co., Kirksville, Mo., 1910.
4. Downing, Carter Harrison: Mechanical Interpretations of the Foot. Jour. Am. Osteo. Assn., 1937 (Oct.) 37:43-48.

Undergraduate Essay Contest

The anonymous sponsor of the Student Essay Contest conducted during the past two school years is offering for the third year osteopathic undergraduate prizes in the amount of $175.00. The prizes are to be awarded in competition among the students of approved colleges of osteopathy, $25.00 to be awarded in each osteopathic college for the best effort of an undergraduate student, and an additional prize of $25.00 for the best among the six winning essays.

The competition is to be judged on the basis of papers of not more than 2,000 words on the assigned subject: "The Importance of Faulty Structural Relations in the Etiology and Treatment of Peptic Ulcer." The subject is to be discussed from the clinical as well as from the pathological or laboratory point of view.

It is the donor's wish that as many undergraduates as desire shall participate in the contest in each school. He is particularly desirous that the manuscripts give evidence of clinical study, inasmuch as the main purpose of the contest is to promote original investigation among osteopathic students. The sponsor believes that the contest will be more worth while if some instructors in the colleges will direct the attention of the contestants along practical clinical research lines.

Entrants in this contest should prepare their papers in *typewritten* form, if possible, *double spaced on one side of the paper* and with *liberal margins*. Manuscripts should be submitted with a number instead of a name, a corresponding number to appear on an accompanying envelope containing the name, address, and school of the contestant.

A standard will need to be set for grading the various points to be considered. A suggested but not an arbitrary distribution of points, determined after consultation with various authorities, is as follows:

Subject matter	50
Accuracy of statement	10
Originality	10
Literary excellence	20
Bibliography and sources of authority (May be in addition to specified length of essay)	10
TOTAL	100

A committee of three members from the faculty of each school will be asked to judge the manuscripts submitted from the undergraduates of that school, and the award in each college will be made solely upon the basis of the decision of the faculty committee.

The six winning manuscripts, properly identified, will be judged by a committee set up by the Executive Committee of the American Osteopathic Association. The announcement of the awards will be made in the General Sessions during the annual convention of the Association in Dallas in June, 1939.

The donor reserves the right to publish any or all of the winning essays.

Public Health Radio Programs

Educational health programs approved by the Committee on Public and Professional Welfare of the A.O.A. are being broadcast over the following stations:

WAAF—920 kilocycles, Chicago, Wednesdays, 1:35 p.m., Chicago Osteopathic Society.

KFKA—880 kilocycles, Greeley, Colo., Wednesdays, 4:45 p.m., Colorado Osteopathic Association.

KIUL—1210 kilocycles, Garden City, Kans., Wednesdays, 11:15 a.m., Kansas Osteopathic Association.

KHBG—1210 kilocycles, Okmulgee, Okla., Sundays, 3:15 p.m., Eastern & Central Oklahoma Osteopathic Association.

WPAR—1420 kilocycles, Parkersburg, W. Va., and WBLK, 1370 kilocycles, Clarksburg, W. Va., Marietta Osteopathic Clinic.

WROK—1410 kilocycles, Rockford, Ill., second Friday of each month, 8:30 p.m., Winnebago County Osteopathic Association.

WFBL—1360 kilocycles, Syracuse, N. Y., third Saturday of each month, 2:00 p.m., Central New York Osteopathic Society.

WHAZ—1300 kilocycles, Troy, N. Y., Mondays, 7:00 p.m., Hudson River North Osteopathic Society, New York.

KFJB—1200 kilocycles, Marshalltown, Iowa, Wednesdays, 7:30 pm., Iowa Association of Osteopathic Physicians and Surgeons.

WTCN—1250 kilocycles, Minneapolis, Minn., every other Wednesday, 10:00 a.m., Minnesota Osteopathic Association.

WADC—1320 kilocycles, Akron, Ohio, Tuesdays, 11:00 a.m., Ohio Osteopathic Association.

KGKB—1500 kilocycles, Tyler, Texas, Wednesdays, 8:15 p.m., East Texas Osteopathic Society.

WHBC—1200 kilocycles, Canton, Ohio, Wednesdays, 3:00 p.m., Stark County Osteopathic Society.

Symposium on the Coronary Syndrome*

Statistical Approach

HARRY L. COLLINS, M.D., D.O.

Professor of Surgery and Gynecology, Chicago College of Osteopathy
Chicago

A proper starting point for any discussion is a definition of the subject.

The term, "Coronary Syndrome," is applied to the signs and symptoms of heart disease caused by an interference with the circulation of blood through the vessels that supply the heart muscle with nutrition, namely, the coronary arteries and their tributaries. The heart, like any other structure in the body, requires adequate circulation for it to function properly. Because the heart muscle function is most essential for the maintenance of life, sufficient disturbance of it will result in death; while the same amount of disturbance in almost any other muscle would be but an impairment of much less moment and perhaps only an inconvenience, certainly not lethal in character.

Coronary disease is most common towards the end of what we consider life's cycle, but of greater importance is the fact that at times it cripples and often kills in the prime of life. Coronary disease is really very common. Allan[1] reported 371 out of 1,000 consecutive autopsies or 37.1 per cent which showed macroscopic evidence of coronary disease. However, only 238 of the 371 showed any myocardial damage. We might conclude, then, that a slight or moderate limitation of blood supply to the heart may limit cardiac action and lessen its reserve without actually causing lesions of the heart muscle.

The etiology, pathology, and treatment will be discussed by others taking part in this discussion. But we mention now, in passing, that the danger of coronary disease is from the reduction of blood supply to the myocardium by way of the coronary arteries and that this reduction is brought about either by altered function of the nerves which control the action of the coronary vessels or by disease of the vessels themselves.

This discussion will be confined largely to the neurological and pathological aspects rather than to the treatment of such conditions as rheumatic heart disease, syphilis, atheroma, embolism, endarteritis obliterans, etc., all of which may cause dysfunction of the coronary vessels.

The individuals in whom the neurological influence is greatest are those who live a hurried, worried existence, often sedentary in their physical activities but prodigal in their dissipation of nervous energy, without adequate periods for recuperation or properly interspersed physical exercise for the benefit of their general biological existence.

The earliest neurological manifestation of coronary disease is usually that symptom complex called, for sake of a better name, angina pectoris. True coronary accidents with fatal termination may and do occur without premonition or warning, but in a large per cent of cases early warning signs are present. If proper recognition is taken of them so that the right care and treatment is instituted, many lives may be prolonged.

Angina pectoris, though strictly speaking but a symptom, has been generally regarded, and deservedly so, as a disease since it was first described as an entity by William Heberden in 1768.

It is a condition that is very common in some localities and very rare in others. It is more prevalent in the temperate zones than in the tropics, more common in the United States, than in other countries whose people take life more philosophically and live a more deliberate existence.

It seems to be much more common now than it was fifty years ago. Though part of this increase in frequency can be accredited to better means of diagnosis, nowadays more people consult physicians for mild symptoms than formerly when the need for diagnosis was less understood and the importance of the symptoms less generally known. Also because the average length of life has been increased, more people reach the age when coronary disease is common than they did fifty years ago.

However, even with all of these facts taken into consideration, angina pectoris and coronary disease have undoubtedly increased in frequency, particularly among individuals on whom the strain of life is great. In those localities of the world and among those people where leisurely living is the rule rather than the exception, angina is much less frequent. Even thirty or forty years ago, if we are to believe the records of prominent physicians of that time, angina pectoris was not a common complaint. Flint,[2] for example, reported that there was one five-year period just before the turn of the century that he had not encountered a single case of angina pectoris. Nowadays, nearly every physician in general practice sees several cases a year and the busy specialist in cardiovascular diseases numbers the cases he sees by the hundreds every year. The situation, in fact, is so appalling that it demands definite action on the part of all physicians, if the increasing incidence and mortality of this affliction is to be lessened.

The disease is still much more common in men than in women. White[3] estimates it at about three men to one woman. In 1782, Heberden reported only three women in a series of one hundred cases of angina pectoris. Possibly the change in women's activity from the sheltered life of the home to

*Delivered before the Forty-Second Annual Convention of the American Osteopathic Association, Cincinnati, July, 1938.

more active competition with the accompanying strain and worry of business and professional life may be responsible for this difference in ratio.

Three-fourths of the patients with angina do not develop the symptoms until after fifty years of age. However, it is common enough in the forties and it is occasionally seen in the thirties. Under thirty years of age, it is extremely rare. The younger a person is when the symptoms appear the more likely is it to be associated with other cardiovascular diseases such as rheumatic heart disease, aortic regurgitation or syphilis.

25 E. Washington St.

REFERENCES
1. Allan: Referred to by White, Paul Dudley: Heart Disease. The Macmillan Co., New York, 1937, p. 344.
2. Flint, Austin: Referred to by White. Ibid., p. 586.
3. White, Paul Dudley; Ibid., p. 590.

Etiology, Pathology and Clinical Diagnosis

J. S. DENSLOW, D.O.*
Kirksville, Mo.

There is no single cause for coronary disease. The grouping of certain disturbances under this heading is on the basis of location rather than similarity of pathological and etiological factors. As the pathology involves the coronary arteries, there is a comparatively uniform clinical picture despite widely divergent etiologies. It is necessary in evaluating this syndrome, to visualize the possible etiologies in relation to coronary arteries and the myocardium and the clinical picture the patient presents.

Etiology.—Apparently the pathological physiology in the coronary syndrome is *(a)* an occlusion, temporary or permanent, partial or complete, of the coronary arteries, and *(b)* an ischemia of the myocardium. The processes which initiate this pathological physiology are many. The more common are graphically illustrated in Fig. I.

CORONARY HEART DISEASE

Coronary Sclerosis — Coronary Sclerosis (with thrombosis)

Rheumatic Endocarditis
Luetic Aortitis

Arterial Spasm — Severe Anemia — Extreme Tachycardia
Aortic Regurgitation

Fig. I—Nervous Background

As in all other conditions, there is an unpredictable variable. A given disturbance rarely causes an identical clinical picture in any two patients. One patient, with advanced coronary sclerosis, may enjoy freedom from heart symptoms, while another, with less sclerosis, may develop a thrombus and die. Hence, when a condition which might result in coronary disease is discovered, the clinical examination and, at times, the progress of the patient is required to establish its importance.

Special mention must be made of the neurological aspect of the etiology.

Apparently this operates not only as an etiological influence where no other disease is present, but also as a maintaining factor when other pathology represents the primary disturbance. Dr. Appleyard, in the next paper of this symposium, will discuss this in detail.

Pathology.—As coronary disease is increasing, there is great interest in the disease. The pathology, and particularly the pathogenesis, is not completely understood. The literature abounds with recent discoveries and theories. There are certain findings which are accepted as facts. Some of these facts are graphically illustrated in Fig. II.

*Formerly Professor of Practice of Osteopathy at the Chicago College of Osteopathy; now Professor of Osteopathic Technique at the Kirksville College of Osteopathy and Surgery.

THE PATHOLOGY OF CORONARY DISEASE

Occlusion, large or small, transient or permanent, of the coronary artery.

Slight fatty degeneration, local or general, leading to myocardial fibrosis.

Single or multiple infections causing areas of fibrosis.

Infarct from thrombus or embolus causing—
- Sudden death,
- Fibrosis,
- Cardiac aneurysm,
- Cardiac rupture,
- Cardiac areas of calcification.

Destruction involving conduction apparatus:
- Complete heart block,
- Bundle branch block.

Fig. II.

As the pathological changes frequently explain signs and symptoms, a few brief statements regarding Figure II will be given. Occlusion without thrombosis leads to myocardial fibrosis. Obviously the efficiency of the heart is decreased. The patient may suffer no distress; he may present the picture of angina pectoris, or he may have the symptoms of an effort syndrome. When the occlusion is caused or complicated by a thrombus and the attending myocardial infarction, a variety of situations may result. If the thrombus is sufficiently large and, if no collateral circulation has been established, sudden death may ensue, or the patient may survive a few hours or even days. If the thrombosis is small, or if collateral circulation has been established to the extent that the patient survives the attack, an infarction which is not fatal to the patient, occurs. The muscle fibers in the ischemic area degenerate, the area is invaded by polymorphonuclear leucocytes and is, actually, similar to an aseptic abscess. With this process there is some febrile reaction and a polymorphonuclear leucocytosis. These facts will be mentioned later under diagnosis.

Following the degeneration of the infarcted area, there may occur *(a)* healing by the formation of a scar, *(b)* aneurysm of the wall of the heart, or *(c)* rupture of the heart.

While it is not possible, in the short space of this paper, to encompass the field of pathological possibilities that are being advanced at present, mention should be made of those findings which are moderately well established, and of those which have an osteopathic bearing.

Dr. Appleyard will elaborate on work which has been done with the "vagus substance", acetylcholine. This substance normally is liberated at the terminal twigs of the vagus nerve when the nerve is stimu-

lated. It has been demonstrated that the dog heart, in the presence of an abnormal amount of acetylcholine, develops coronary sclerosis.

In his paper, "Angina Pectoris With Special Reference to Mechanical Causes"[1] published in THE JOURNAL for February, 1938, Dr. Appleyard reports that in certain patients with electrocardiogram evidence of coronary disease following the application of manipulative treatment, there is electrocardiogram evidence of improvement.

In the current clinical experiments being conducted at The Chicago College of Osteopathy electrocardiograms are being taken before and after osteopathic manipulative treatment is administered. While sufficient work has not been done to justify final conclusions, enough has been done to permit certain observations to be made. In those cases showing evidence of coronary sclerosis and myocardial fibrosis at electrocardiographic examination, no change in the electrocardiogram was noted following osteopathic manipulative treatment. Treatment consisted of stretching the perivertebral soft tissues[3] and articulating the entire spinal column. With one exception, the patients showed symptomatic improvement. In the one exception, the patient "felt much better" following treatment. This improvement, however, was transient (lasting for a few hours to a day usually). In those cases where there was electrocardiographic evidence of angina pectoris without fibrosis, the tracing was more nearly normal after treatment than before. This work is being continued and it is expected that more information will be forthcoming.

Winternitz, Thomas and LeCompte[2] in "The Biology of Arteriosclerosis" report pathological studies which lead them to state that a vast majority of thrombi (coronary) occur at the site of recognized pathological coronary change.

Schlesinger[3] in "The Injection of the Coronary Artery" states that in normal human hearts, even though senile, the coronary arteries are end arteries without anastomoses and that anastomosis occurs when and where there is obstruction in a coronary vessel.

This observation is of great importance clinically speaking. It means that if the patient develops a coronary occlusion slowly, collateral circulation will be established with the preservation of a moderate cardiac reserve. Thrombi can occur in these cases without fatal or even near fatal results. Dr. Robuck will discuss this point further in another paper in this symposium.

Dr. Collins has already pointed out that mental strain apparently predisposes to coronary sclerosis. It is likewise well known that patients with hyperirritable nervous systems most frequently suffer from the symptoms of angina pectoris.

Diagnosis.—The diagnosis of coronary disease usually does not present difficulty. When it does, it is because the disease is in its incipiency or because the findings are atypical. The symptoms and signs are dependent on the permanency of myocardial ischemia, the speed of development of myocardial change, the extent of this change, the sufficiency of coronary anastomoses, the strain on the heart and the sensitivity (nervousness) of the patient.

Coronary disease may be conveniently subdivided into angina pectoris, coronary sclerosis, and coronary thrombosis. This classification is necessary here, as the diagnostic findings are not similar in all groups.

The symptoms which are common to the three classifications are: dyspnea, pain, oppression, fatigue, and palpitation. A given case may have all or but one or two of these complaints.

ANGINA PECTORIS

The diagnosis of angina pectoris in many cases, is based on the patient's description of an attack, and in a few, on electrocardiographic examination, which will be discussed later. The attack of angina and that of coronary thrombosis are similar in character, but differ in duration. The former usually lasts not more than thirty minutes while the latter may last for many hours, even days. A typical seizure occurs usually during exertion and is characterized by agonizing substernal pain which may radiate. Formerly great stress was laid on the radiation to the right or left arms, but in recent years it has been recognized that the radiation may be to the location of extracardiac pathology. It has been reported that the radiation may be to an abscessed tooth, to the abdomen in gastric or gallbladder disease, etc. There is usually marked dyspnea, a sense of profound oppression, and fatigue. Occasionally there may be palpitation.

Generally the only physical signs that the patient presents are in his appearance. In a severe attack he is frozen, in a state of shock; his face is haggard; his skin ashen; he ages in a few seconds; he appears to border on dissolution; he is suffering beyond description. Yet other physical or laboratory abnormalities are lacking. The attack passes and he resumes a normal appearance. A fear of impending death has been given as a valuable diagnostic sign. Actually, this is not frequently seen and when the attacks continue, the patient usually loses much of this fear.

A typical attack has been described. Not infrequently the attacks are atypical and in these considerable difficulty is encountered. A colleague of mine worried for months about attacks of chest pain which proved to be caused by a rib lesion. A patient was seen in the diagnostic clinic whose complaint had been diagnosed as brachial neuritis; actually he had an atypical angina.

The safe approach is to consider every patient who presents chest pain, with or without radiation, oppression, or unexplained fatigue, as a possible case of angina pectoris until proved otherwise.

CORONARY THROMBOSIS

The attack in coronary thrombosis resembles that of angina except that it lasts longer and is more difficult to relieve. Here the cardiac infarct which follows the thrombosis brings about several positive signs. As in angina pectoris the attack usually grips the patient suddenly. The major symptom usually is substernal pain, dyspnea or oppression. Unlike angina pectoris, the attack is not relieved in a short space of time, but frequently persists for several hours. Even if the pain or distress of the attack disappears, the patient is weak, sometimes virtually in a state of shock. A history of this type is sufficient to establish at least a tentative diagnosis of coronary thrombosis. In addition to the history, there are other evidences of the disturbance. The electro-

cardiogram shows an abnormality in the ST interval and in the T wave—the characteristic coronary T wave. If the heart dilates, there will be murmurs, and if the ensuing infarction is close to the pericardial surface, friction rubs may develop.

Under the heading "Pathology" it was stated that the degeneration of the infarcted area caused a polymorphonuclear leucocytosis. This occurs within a few days after the vascular accident and is accompanied by a generalized febrile reaction. It is important that this period be recognized, as it is at this time that the myocardium is weakest and aneurysm or even rupture may occur if the patient is not kept at absolute bed rest.

CORONARY SCLEROSIS

This phase of the coronary syndrome is frequently difficult to diagnose. It probably exists in most cases of angina and undoubtedly is present in every case of thrombosis. There may be no symptomatology with it and frequently the only positive finding is an otherwise unexplained myocardial fibrosis as seen on the electrocardiogram. It is sufficient to state that every patient with a decreased myocardial reserve should have an electrocardiogram to determine the state of the heart muscle.

Kirksville College of Osteopathy and Surgery.

REFERENCES

1. Appleyard, Esmond C.: Angina Pectoris with Special Reference to its Mechanical Causes. Jour. Am. Osteo. Assn., 1938 (Feb.) 37:245-247.
2. Winternitz, M. C.; Thomas, R. M.; and LeCompte, P. M.: The Biology of Arteriosclerosis. Charles C. Thomas, Springfield, Ill., 1938.
3. Schlesinger, M. J.: The Injection Plus Dissection Study of Coronary Artery Occlusions and Anastomoses. Am. Heart Jour., 1938 (May) 15:528-568.

The Osteopathic Aspect

ESMOND C. APPLEYARD, A.B., D.O.
Department of Physiology, Chicago College of Osteopathy
Chicago

In this paper we are concerned with the physiology of the normal heart and the mechanism by which osteopathic lesions produce, first, functional, and later, organic disease.

Arterial blood reaches the heart by way of the right and left coronary arteries. In early life these arteries anastomose sparingly, but with advancing age and under the influence of gradual occlusion, collateral circulation becomes established.

There are authentic cases in which the heart has continued to function adequately to sustain life by means of collateral circulation when the coronary arteries have been occluded completely by disease. Besides anastomoses between branches of the coronary system, anastomoses between branches of the coronaries and branches of the pericardial arteries may exist. Branches of the coronaries connect with the ventricular cavities and sinusoids in the myocardium through arteriolominal and arteriosinusoidal vessels. Blood may move from the right auricle through the Thesbian veins and coronaries in the reverse direction, and the heart, through its capacity to utilize the whole of the oxygen carried, can obtain enough oxygen for light work from venous blood.

The heart and the coronary arteries receive nerves from both the sympathetic and parasympathetic nervous systems. The sympathetic nerves to the heart belong to the thoracolumbar division of the autonomic nervous system. Fibers arising in the lateral horn of the first five thoracic segments enter the ganglionated cord and run to the superior, middle and inferior cervical ganglia. From here the cardiac nerves extend to the nodes and the bundle of His. In addition to this, there are direct nerve connections between the upper four or five thoracic ganglia and the heart. Stimulation of the sympathetic fibers to the heart causes a quickening of the rate and an increase in the force of contractions of both the auricles and the ventricles. The coronary arteries are dilated by sympathetic impulses. Stimulation of the stellate ganglion or the intravenous injection of small doses of adrenalin increases the coronary flow.

The vagus nerve carries the parasympathetic nerve impulses and exerts a continuous restraining action upon the rate of the heart. Stimulation of the vagus results in a diminution in the force of myocardial contraction, conductivity through the bundle of His is impaired, and the output of the heart is reduced. As the result of these factors, the blood pressure falls and the volume of blood entering the coronary arteries is decreased.

The coronary arteries are also supplied with vagal fibers. Stimulation of these fibers results in constriction of the coronary vessels.

It has been experimentally proved that vagal stimulation causes the production of acetylcholine in the heart. This chemical produces the same effect on a heart as does vagal stimulation, namely, cardiac slowing and coronary constriction. It has been shown that if dogs receive daily experimental injections of acetylcholine the lumina of the coronaries become permanently narrowed and degenerative changes occur in the myocardium. It is believed that in man the overabundance of acetylcholine produced in the heart by continued vagal hyperactivity produces similar regressive changes, and that the coronary circulation and myocardial nutrition are thus impaired.

Sympathin, the chemical transmitter of the sympathetic nervous system, will increase the coronary flow as much as 85 per cent.

Let us now consider the osteopathic concept of the etiology of coronary disease. As has been stated, the sympathetic fibers to the heart and coronary vessels leave the spinal column with the first to the fifth thoracic nerves. An osteopathic lesion of the spinal or costal articulations in this region gives rise to the usual periarticular soft tissue changes such as inflammation, edema, the accumulation of toxic products, and fibrosis. There is also an increase in tension of the fascia and the ligaments of the joint, an altered tension of the small muscles of the spine, and limitation of motion and change in position of the articular facets.

In the soft tissues and in the joint facets of this region of lesion pathology lie sensory nerve endings such as muscle spindle bodies and Meissner's corpuscles. These structures are stimulated by change in shape and by pressure resulting from the soft tissue pathology. The resultant nerve impulses pass over sensory nerves through the posterior root ganglia and into the posterior horn of the cord.

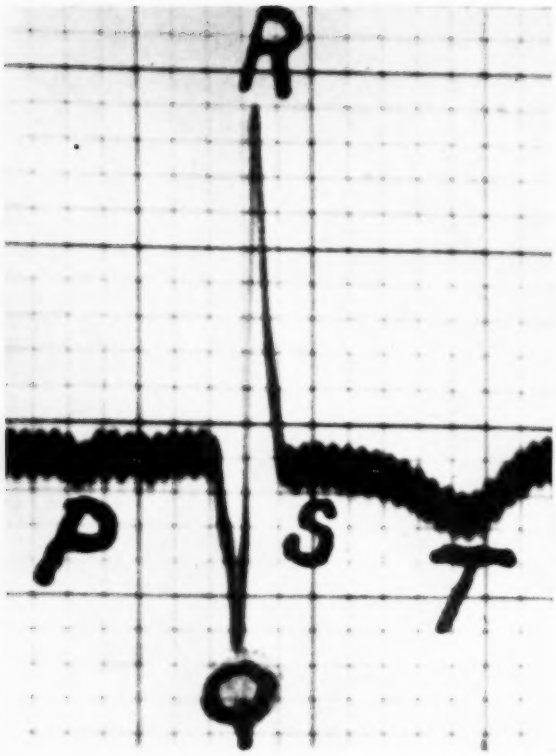


Fig. 1.

Sherrington, in his humoral explanation of sympathetic nerve conduction, proposes the liberation of an excitatory or "E" substance and an inhibitory or "I" substance at the terminal end of the axone. An accumulation of "E" substance or "I" substance in the posterior horn of the spinal cord must interfere with reception and initiation of nerve impulses either to or from the spinal cord.

Thus, osteopathic articular lesions in the upper thoracic segments of the spine, for example, excite abnormal impulses which pass to the spinal cord and there create a condition of too great irritability or inhibition. As a result of this, the rate and intensity of nerve impulses passing from this region of the spine to the heart and coronaries is altered, and thus is upset the balance between sympathetic and parasympathetic impulses, which is so important for the normal function and maintenance of all viscera, as well as the heart.

In addition to this perversion of the normal nervous control of the cardiac mechanism, the heart suffers the usual secondary effects which osteopathic lesions produce in an organ or tissue whose nerves pass through or have their origin in the region of an osteopathic lesion. These effects, as found by workers in the A. T. Still Research Institute, include some degree of passive congestion, edema, changes in the electrical potential and decreased alkalinity of the tissue and the resulting functional perversions.

Thus it is seen that normal cardiac function and the maintenance of a healthy myocardium and coronary system is dependent upon normal relationships of the skeletal structures segmentally related to the heart. Osteopathic lesions of the upper thoracic spinal and costal articulations result in abnormalities of the cardiac tissues. Such lesions, originating usually from errors in posture, are present for a long time before any cardiac pathology becomes manifest. Nevertheless, such lesions are direct and important etiological factors in the production of cardiac disease, and they must be corrected if eventual degenerative changes in the heart and its blood vessels are to be avoided.

The first symptoms of cardiac damage may be arrhythmias such as premature beats or paroxysmal tachycardia. Angina-like pains may occur, especially on physical or emotional exertion or during a period of tachycardia when the heart's great activity requires an unusual amount of arterial blood. In other cases the earliest symptoms may be pain in the upper thoracic spine or its ribs, or pain in the left shoulder or arm.

An accurate and measuremental method of gauging the condition of the myocardium is offered by the electrocardiograph. A recent development along this line is the use of lead IV of the electrocardiogram in determining the state and efficiency of the coronary system. In preparing a lead IV record, the two electrodes are placed on the precordium over the apex beat and on the left leg. The normal lead IV tracing is shown in Fig. 1.

You will observe that there is a definite Q spike and that the T wave is negative or below the isoelectric line.

Katz and Kissin and Levine and Levine have utilized lead IV of the electrocardiogram in studying a considerable number of cases of angina pectoris. From this work they find that absence of the Q wave in this lead or a Q wave of 2 mm. or less and a positive T wave, i.e., above the isoelectric line, is found in a large percentage of these cases. They conclude that while these findings are not absolutely diagnostic of angina pectoris, they are at least suggestive.

There has been but little work done by osteopathic workers in studying the progress of coronary patients under osteopathic care as measured and recorded by electrocardiograms. If osteopathic lesions can reflexly decrease coronary flow, it would appear that the correction of these lesions would produce some immediate response in lead IV. If that is the case, it would indicate that there is a mechanical background in many cases of coronary disease and that osteopathic corrective treatment is beneficial in these cases.

The problem presents such interesting possibilities that within the last year some work has been done on it at the clinic of the Chicago College of Osteopathy. Thus far, the work has been little more than started, but the results have been so interesting that we plan to continue the investigation.

Electrocardiograms were first run on several students in the college and they showed average normal tracings. Any upper thoracic and cervical joint lesions found were then corrected. After the patient was allowed to rest for a few minutes, a second electrocardiogram was run. No changes except minor alterations in rate could be detected between the record made before and that made after the treatment.

A patient was selected who entered the clinic complaining of attacks of pectoral pain. An elec-

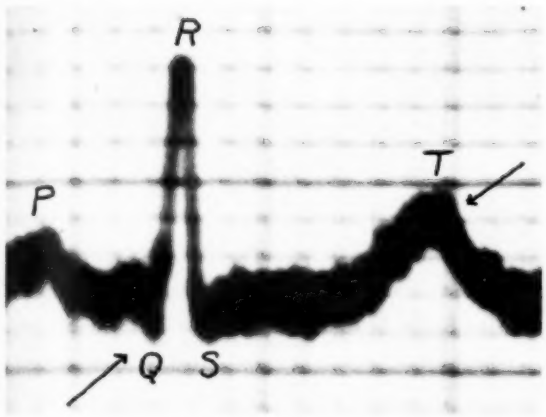


*Fig. 2.—Before Treatment

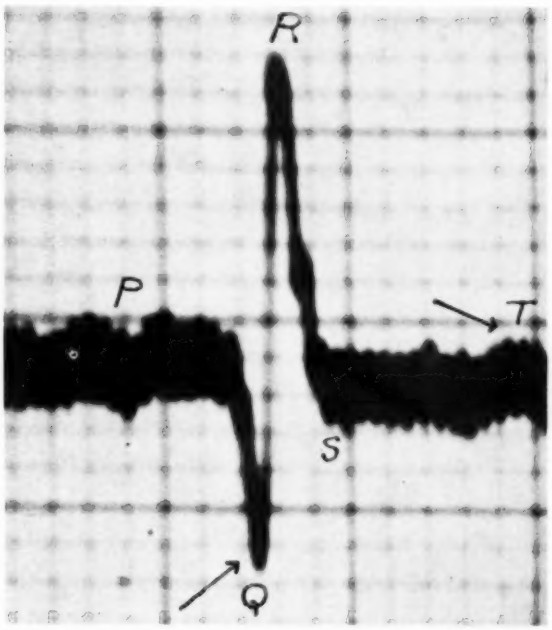


Fig. 2.—After Treatment

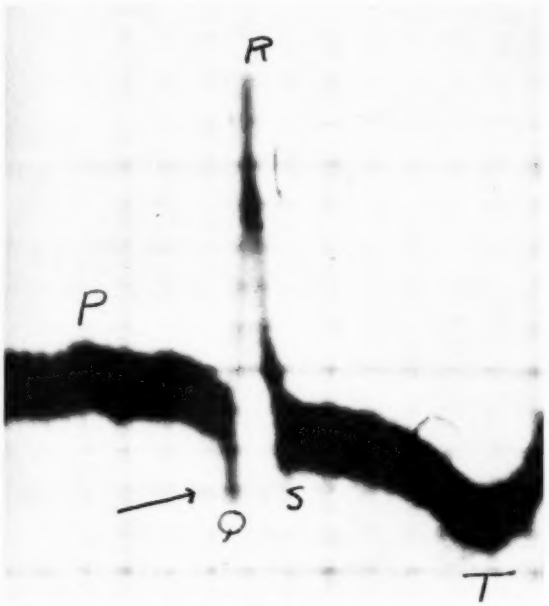


Fig. 3.—Before Treatment

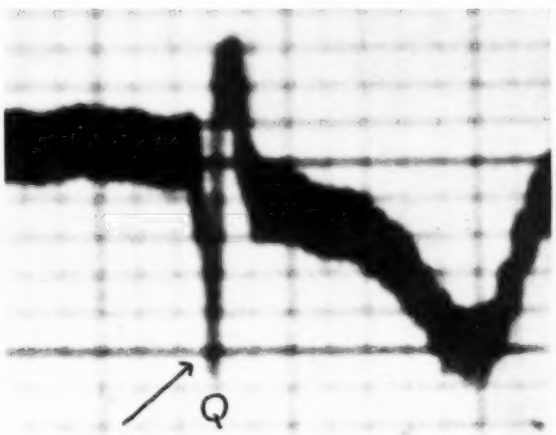


Fig. 3.—After Treatment

trocardiogram was made before any treatment was given. An osteopathic examination revealed joint lesions of the third cervical and first and fourth thoracic segments. These lesions were corrected and after a short rest, a second electrocardiogram was run on the patient. The lead IV electrocardiograms made before and after treatment are shown here in Figs. 2. Lead IV made before treatment shows that the Q wave is almost entirely absent. The T wave is above the isolectric line. These are the two findings mentioned as suggestive of coronary disease. Lead IV after treatment showed a relatively normal tracing with a Q wave 4 mm. in depth and the T wave flattened or slightly below the isoelectric line.

A second patient was selected on entering the clinic after an absence of a year. Previously the diagnosis was essential hypertension. An electrocardiogram was made because the complaint suggested anginal pain. An osteopathic examination revealed joint lesions of the first, second, third, fifth and sixth thoracic segments.

The Q wave of the electrocardiogram made before treatment shows a depth of only 2 mm. After corrective treatment the Q waves reached an average depth of 5 mm. (See Figs. 3.)

Several other similar cases have been handled by the same procedure, and while the results are less outstanding, the electrocardiograms made after manipulative treatment more nearly approach the normal. In other cases correction of the osteopathic lesions found did not alter subsequent electrocardiograms. It is felt that in these cases there is extensive coronary disease of an organic nature. These patients will be kept under continued treatment and subsequent electrocardiograms made at later dates to see whether gradual improvement has taken place.

*Electrocardiograms of the cases described here as well as others were on display at the Chicago College of Osteopathy booth in the Scientific Exhibit.

National Bank Bldg.,
La Grange, Ill.

Management

S. V. ROBUCK, D.O.
Professor of Diagnosis, Chicago College of Osteopathy, Chicago

It is hoped that through knowledge of the etiology and pathology of coronary disease, a rational and effective therapeutic procedure may be found. Relatively, the study of cause and effect is simple, though all-important. The most difficult and by far the most urgent problem is to find an adequate therapy. Physicians and patients are ultimately and essentially interested in knowing what can be done for this condition.

Since the immediate causative factors and the pathologies are fairly well understood, therapeutic measures are based upon these known facts. The practical application of treatment deals with prophylaxis and what might well be termed emergency. Too often when the physician is consulted the problem has already become one of emergency.

Prophylaxis.—If the mortality rate among our most useful citizens is to be reduced, an effective prophylactic treatment must be used. From the report given by Dr. Collins, we readily conclude that one of the leading etiological factors is psychological. Those who live and work under a heavy mental load are the most frequent victims. Emotional tension, when a constant factor, bombards the whole body economy with excessive impulses and uses up energy in excess of the normal supply. Impulses are not grounded, but find a response and expression somewhere.

Undoubtedly, the organs of internal secretion become involved. That the somatic system is influenced by an overload of emotional strain has been observed by osteopathic physicians. Muscle tension similar to that produced by absorption of infectious toxins or by the toxins of muscular overwork is associated with a mental and emotional overload. An extreme emotional strain, as mourning the loss of a loved one, can bring on precordial pain. This is probably the result of an influence upon the myocardial circulation. Osteopathic manipulative treatment will relieve this distress promptly though the exciting cause remains. The point I wish to make is that there is a physical change resulting from an emotional influence and that the symptom-complex can be successfully dealt with through manipulative therapy. It may be impossible to reduce the overload incident to economic or domestic conditions, but the physical effects may be materially mitigated.

Inherent predisposition is another cause, beyond our control, of arterial disease. Hyper-irritability of the vasomotor mechanism in offspring of those who have degenerative pathology of the circulatory system has been recorded at the Mayo Clinic.[1] Though the predisposition is beyond osteopathic control, the susceptibility may be reduced. Clinical experience indicates that this is true. Experimentally, this problem offers great possibilities for osteopathic research.

There are many physical conditions which may be important etiological factors. Boas and Levy[2] have presented case histories and discussion pointing to this probability. The viscerosomatic reflexes are ably discussed and the probability of retrograde influences upon the heart are also pointed out as follows:

> Fitz-Hugh and Wolferth's observation is confirmed that there are patients with gall-bladder disease, with reference of the pain to the precordium and T-wave changes in the electrocardiogram, in whom operative removal of the gall-bladder is followed by disappearance of precordial pain and a return to normal of the electrocardiogram.[3]

Dr. Appleyard has called your attention to the results, obtained in experimental studies at the Chicago College of Osteopathy, of removal of somatic foci of irritation. These results were obtained in the presence of well-established organic lesions of the circulatory mechanism.

Hypertension is frequently associated with cardiac pathology, though not essential to its development. It probably is a manifestation of imbalance of the functions of the sympathetic nervous system, the endocrine system, and the intestinal tract, including the associated organs of the digestive tract. As a result of these dysfunctions, general metabolic disorder exists.

The changes in physiology are so extensive that therapeutic measures must be inclusive. There are times that success follows a break into the cycle of causes even though many factors are given no consideration or treatment. A patient may be given mental and physical rest and obtain a symptomatic recovery. On the other hand, normalization of body mechanics, securing better bowel elimination and removal of foci of infection frequently changes the outcome from one of hopelessness to one of success. Relative to osteopathic etiology and manipulation, the writer had this to say in a paper published in THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION for September, 1935:

> A lesion in the region of the ninth thoracic to the second lumbar may be potent in maintaining arteriole spasm or vascular contracture in other organs than the heart; or may have to do with the control of the mechanics of the third and fourth thoracic segments. Since we are dealing with a general and progressive degenerative condition that involves the autonomics, therapy as well as diagnosis must be inclusive and not exclusive.[4]

Further observation increases my confidence that this is correctly stated.

As Dr. Denslow pointed out, the longer a patient has to establish collateral circulation and compensatory enlargement of the heart the better the prognosis. Elimination, through osteopathic manipulative treatment, of factors that reduce myocardial efficiency and that maintain high blood pressure will aid very materially in carrying the patient along until collateral circulation and other compensatory changes can be established.

Ambulant patients rarely need other than osteopathic treatment, a salt-free or a low salt diet, atten-

tion to constipation, removal of foci of infection, psychological adjustment and a reduction of activity with an increase of frequency and length of rest periods.

Emergency Treatment.—Since Heberden (1768) described the classical symptoms of angina pectoris, of which he was a victim, various therapeutic measures have been undertaken in an attempt to meet effectively the demand for relief and to improve cardiac efficiency. These measures, most of which have been discarded and forgotten, are too numerous to list here.

From 1768 to 1935 inclusive, more than seventy-five different therapeutic measures have been tried. These vary from simple household remedies to the most complicated surgical operations. The objective of practically all treatment has been to relieve the patient of minor or extremely distressing symptoms—pain or discomfort—and to improve myocardial circulation.

Since the time of Morgagni (1682-1741), that great Italian anatomist, who may well be considered the Father of Pathology, the study of circulatory defects of the myocardium—recognized by Morgagni as a factor in angina pectoris—has received major attention.

More recently attempts are being made to secure relief by affecting factors more fundamental. That is, metabolic imbalances and neurological control of circulation.

Since the most frequent complications of coronary disease and angina pectoris are coronary thrombosis, hypertension, and congestive heart failure,[5] we may give them consideration now.

The fact that these complications are of an organic character justifies a conclusion that there is an organic basis for most cases of angina pectoris. The percentage of cases caused by organic disease has been variously estimated, White[6] stating that 95 per cent have organic lesions. Occlusions of the coronary arteries are the result chiefly of thrombi and hemorrhage in the coronary wall, thus completely or partially occluding coronary arteries directly.

Since a study of the arterial pathology and collateral circulation demonstrates the importance of the time element in establishing an adequate collateral circulation, we may understand the importance of using every possible aid in carrying the patient through the critical period when such a compensatory mechanism is being constructed.

That there are patients who will do better without medication must be recognized. The problem of the osteopathic physician is to recognize these cases. That osteopathic manipulative therapy is an important aid to these patients is attested to by those who have had experience in its application. It is basic and fundamental. No cardiac patient is adequately treated if not given the benefit of osteopathic manipulative treatment. Removal of somatic foci of neurological irritation promotes better cardiac circulation and undoubtedly aids in toning up the myocardium. Louisa Burns[7] demonstrated the atonicity of the myocardium resulting from experimentally produced interosseous lesions.

Long continued pain often causes "nerve habit" and that must be interrupted sometimes in order to obtain relief from pain. By the same rule of neurological physiology, deleterious reflex phenomena must be stopped by removal of muscular contractions and contractures. Restriction of motion between the articular facets and vertebral bodies must be released by adjusting the interosseous abnormalities. Costovertebral subluxations must be adjusted and intercostal myalgias overcome. Nerve block apparently may be produced by steady pressure and traction on hyperesthetic deep spinal muscles. Libman[8] has described a technic of steady pressure upon the brachial plexus to stop shoulder pain in angina pectoris. He states that the disabled shoulder resulting from angina pectoris is symptomatically cured, that is, pain is relieved and normal use of a badly disabled shoulder is regained following pressure for two minutes on the brachial plexus.

Patients suffering circulatory failure associated with degenerative changes in the organs directly and indirectly affecting the circulatory mechanism, testify to the marked relief and sense of well-being following osteopathic manipulative treatment. This is an important therapeutic measure promoting rest and, incidentally, recuperation of a myocardium already suffering from ischemia and biochemical imbalance.

Physicians other than those of the osteopathic school have noted and written of the viscerosomatic and visceral reflexes associated with coronary disease. That somatic pathologies in remote parts of the body have antedated coronary disease by several months or years has been recorded in an excellent article by Ernst P. Boas, M.D., and Hyman Levy, M.D., referred to previously.[9] Libman[10] suggested that "the frequent coexistence of shoulder pain and angina pectoris was determined by the fact that they were both caused by the same metabolic disturbances."

Lian[11] believes that "cervical neuralgia is the result of repeated 'nerve shocks' caused by the frequent anginal seizures." He also believes that "the reverse process can take place; that pure brachial neuralgias can give typical anginal radiations, and that in such cases a retrograde radiation takes place."

I have pointed out previously[12] the relation of retrograde reflexes to cardiac degeneration and angina pectoris. The relation of neurological pathology was cited as was the experimental work of Louisa Burns in the study of the association of interosseous lesions to pathology of the sympathetic ganglia.

That there is a progressive and insidious process operative in the embryological cardiac section of the body and a general metabolic dysfunction slowly but surely laying the destructive background for coronary disease seems to be well established.

During an acute attack an emergency exists and crutches or even a stretcher, literally speaking, are justifiable. Not only is the utilization of every possible aid indicated, but the physician is in duty bound to see to it that the patient has the benefit of every therapeutic measure that offers help in a crisis that may terminate life shortly or may soon be passed, permitting many years of enjoyable and useful life.

The pain and distress associated with circulatory failure which so frequently attends or ushers in the variety of symptoms which bring the doctor to the patient must be relieved as promptly as possible. The longer this relief is denied the patient, the more certain is an otherwise avoidable early disastrous ending.

In myocardial failure, probably the first and most important measure is to secure rest. To this end,

the patient must be kept at absolute rest in a position most comfortable for him. This may mean sitting in a comfortable chair with the feet elevated or being propped up in bed.

During an acute crisis, the attending nervousness, apprehension, distressing dyspnea and precordial discomfort at times call for morphine hypodermically, one-sixth to one-fourth grain, to be repeated as needed. Thus the much needed sleep will be secured. There are a few individuals who do not tolerate morphine well and some other sedative will have to be used for them.

Likewise digitalis, one and one-half grains intravenously or intramuscularly, may need to be used promptly and properly to bring about early relief. Patients with a less urgent condition may receive digitalis orally or none at all. The use of xanthines, particularly theobromine, have been both recommended and condemned by equally experienced internists.[13]

"Wet" patients in a critical condition may need a thorough diuresis, as from the use of ammonium chloride or salergyn. Great care must be exercised that the patient is not over-digitalized when dehydration has been accomplished as fatal heart block may occur. A dietary regime, such as a dry salt-free diet is indicated in "wet" cases. The liquid intake should be limited to one thousand cc. in twenty-four hours. The fluid intake and output must be measured and recorded.

Undoubtedly, our greatest opportunity for usefulness is in the field of prophylaxis. The emergency treatment will add, in many instances, several years of life and therefore is important. It is far better to anticipate the influences of somatic visceral reflexes and maintain a normal body mechanism. At least it is within the province of osteopathic therapy to strive for and approach this ideal as nearly as it is humanly possible to do. This can be done with the cooperation of patients, a large percentage of whom are potential coronary victims.

Constant vigilance of the osteopathic physician in the examination of patients is his obligation and opportunity. He must give his patient the benefit of frequent general examinations as well as examinations of the somatic structure.

Osteopathic physicians are trained in the detection of early variations from the normal in body mechanics and are the most expert physicians in the art of applying a very difficult technic designed to restore normal structure and function to all the organs of the body. The need of osteopathic service is ever present. The opportunity and responsibility is ours and challenges every one of us in our daily practice.

SUMMARY

Osteopathic therapy is an important, if not the most important, therapeutic measure we have in the prophylactic and emergency treatment of degenerative changes in the circulatory system.

The extensive influence of osteopathic therapy upon all bodily functions more nearly compares with the extensively disordered functions associated in degenerative changes of the circulatory mechanism than does any other known therapeutic measure.

In all complications, osteopathic treatment is effective in assisting to improve myocardial circulation and strength, to reduce hypertension and in promoting better metabolic balance.

Psychology plays a large part in both prophylactic and emergency treatment.

Diet and physical and mental rest are essential factors in meeting the needs of the body both in prophylactic and emergency treatment.

There are indications for the utilization of medication and probably surgery also in dealing with complications and extensive and otherwise uncontrollable circulatory changes.

The osteopathic physician must exercise excellent judgment in deciding as early as possible whether a patient will do better with or without medication. The burden of responsibility rests on him. It is no light burden.

25 E. Washington St.

REFERENCES

1. Hines, Edgar A., Jr., and Brown, George E.: The Cold Pressor Test for Measuring the Reactibility of the Blood Pressure: Data Concerning 571 Normal and Hypertensive Subjects. Collected Papers of the Mayo Clinic for 1935. W. B. Saunders Co., Philadelphia, Vol. 27, pp. 583-588. Also Hines, Edgar A.: The Reaction of the Blood Pressure of 400 School Children to Standard Stimulus. Ibid., 1936, Vol. 28, pp. 642-646; and The Heredity Factor in Essential Hypertension, Ibid., 1937, Vol. 29, p. 528.
2. and 3. Boas, Ernst P., and Levy, Hyman: Extracardiac Determinants of the Site and Radiation of Pain in Angina Pectoris with Special Reference to Shoulder Pain. Am. Heart Jour., 1937 (Nov.) 14:540-554.
4. Robuck, S. V.: Body Mechanics in Relation to Cardiac Conditions. Jour. Am. Osteo. Assn., 1935 (Sept.) 35:1-4.
5. White, Paul Dudley: Heart Disease. The Macmillan Co., New York, 1937, p. 614.
6. White, Paul Dudley: Ibid., p. 610.
7. Burns, Louisa: Osteopathic Pathology of the Heart. Jour. Am. Osteo. Assn., 1933 (Oct.) 33:59-62.
8. Libman: Referred to by Boas, Ernst P., and Levy, Hyman: Ibid., p. 544.
9 Boas, Ernst P., and Levy, Hyman: Ibid., p. 545.
10. Libman: Referred to by Boas, Ernst P., and Levy, Hyman: Ibid., p. 545
11. Lian: Referred to by Boas, Ernst P., and Levy, Hyman: Ibid., p. 545.
12. Robuck, S. V.: Ibid.
13. Gold, Harry; Kwit, Nathaniel T.; and Otto, Harold: Xanthines (Theobromine and Aminophylline) in Treatment of Cardiac Pain. Jour. Am. Med. Assn., 1937 (June 26) 108:2173-2179.

Surgical Procedures

HARRY L. COLLINS, M.D., D.O.
Chicago

There are certain surgical procedures which have been employed for the relief of angina pectoris and coronary disease in selected cases. These may well be divided into two classes:

In one class are those which have been devised for the relief of pain. In the other class are those devised to aid in the development, improvement, or re-establishment of collateral circulation to the myocardium whose circulation has become impaired as the result of the development of coronary occlusion.

The first group mentioned comprises those operative procedures directed toward separating the sympathetic nerve connections of the heart sufficiently to relieve pain. Jonnesco,[1] in 1916, was the first to attempt this operation, which consisted of a cervical sympathectomy. Since then there have been a variety of techniques for the cutting or removal of different sympathetic nerves and ganglia. No single technique has been uniformly successful, for apparently afferent impulses enter the central nervous system by way of the thoracic as well as the cervical nerve connections and even by different tracts in different individuals. At present, cervical and thoracic sympathectomy is rather an experimental measure of the hit-or-miss sort and justified only in those carefully selected cases where the pain is of sufficient magni-

tude and the myocardial damage sufficiently small to justify it.

Furthermore, even in these selected cases, because of the disagreeable after effects, such as ptosis of the upper eyelid, contraction of the pupil (Horner's syndrome), hyperesthesias and burning sensations of face, mouth, ears, neck, upper chest (which not infrequently follow, with varying degrees of severity), the procedures of sympathectomy have been largely supplanted by alcoholic injections of these same nerves individually selected for the individual case, because the bad after effects, when they do occur, are usually less severe and perhaps of shorter duration.

It must be borne in mind constantly, however, that at times the after effects may be more disturbing to the patient than the original anginal pain itself; also, that these procedures are in the nature of symptomatic treatment and that even in the so-called successful cases only the disagreeable or painful sensations have been cut off in whole or in part. However, this means cutting off also the warning signal which, though affording relief to the patient, does not necessarily prolong life and may, in fact, shorten it, if too much activity is resumed. Death coming suddenly is still the rule in these patients even though they have been more or less relieved of their pain by a break in the sympathetic nerve connections.

In the other group of cases where the operative procedure is to improve the blood supply to the heart by other channels than the coronary vessels and not alone primarily for the relief of pain, there are two operative approaches which have been recommended and which have been successfully accomplished in a few instances: One is to transplant part of the pectoralis major muscle to the myocardium, (Claude Beck[2] of Cleveland originated this operation), and the other is a more recent contribution by Laurence O'Shaughnessy,[3] of London, which is a cardio-omentopexy. This latter operation is founded on the principle that the omentum is the only structure with the specific property of vascularization. After careful study and experimentation on animals, the operation was devised to transplant a part of the abdominal omentum through the diaphragm to the ischemic area of the myocardium.

They not only report a few cases of success in relief of symptoms, but also have definitely demonstrated vascular connections established in three weeks which continue to increase, not reaching a maximum for at least a year.

At present, the surgical approach to coronary disease is in its infancy; it thus far promises to prolong and make more comfortable the lives of some of these sufferers beyond what can now be expected.

Notwithstanding this hopeful promise of the future, at present these surgical procedures should be reserved only for the obstinate or crippled cases of angina pectoris as regards the first group. As for the second group, unequivocal evidence of cardiac ischemia should be demonstrable in which it seems that the immediate risks of operation are less than those the patient must in any event run, if his disease were allowed to pursue its natural course.

25 E. Washington St.

REFERENCES

1. Jonnesco, T.: Angine de Pointrine Guerie par la Resection du Sympathique Cervicothoracique. Bull. de l'Acad. de Méd., 1920, LXXXIV, p. 93.
2. Beck, Claude: Referred to by White, Paul Dudley: Heart Disease. The Macmillan Co., New York, 1937, p. 604.
3. O'Shaughnessy, Laurence: Surgical Treatment of Cardiac Ischemia. Lancet, 1937 (Jan. 23) 1:185-194.

Program for A.O.A. Convention in Dallas Next Summer Nears Completion

The program for the General Sessions has been completed and some of the Section programs are almost complete; in others, satisfactory progress is being made, while a few are still in the formative stage.

It is a great inconvenience for the General or Section program chairmen to have to wait indefinitely for answers to letters. One or two such instances delay the building of a program because other invitations for that period cannot be issued until the first is answered. Answers to invitations to address the General Sessions usually have been prompt because the recipients have been appreciative of the honor. An invitation to appear on a Section program is also an honor and it deserves a prompt reply. Help your Section program chairman to make your Section the best at the convention. Every Section program chairman is urged to submit monthly reports to this Bureau and Central office. Names and addresses, titles of papers, and dates of acceptance should be given.

Three films of unusual interest are being prepared for the General Sessions and several others will be shown in the Sections. Those in the main assembly will demonstrate actual osteopathic diagnosis and treatment. Their authors are noted osteopathic physicians and men of rare ability. They will be shown under the supervision of the A.O.A. Committee on Professional Visual Education.

Time has been reserved for addresses by Federal public health authorities who will discuss health problems vital to our professional existence. In addition some of the most prominent officials of the State of Texas will address the assembly.

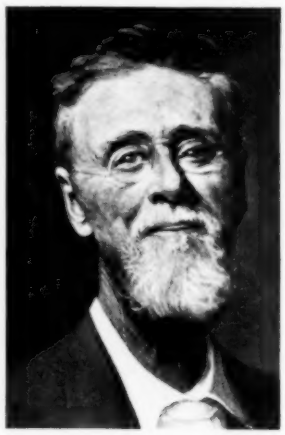
Three symposia, dealing with important subjects of general interest, are being prepared. Any one of these, alone, will be worth the cost of the trip to the convention. Each is interesting and instructive. Every speaker who will address the convention is an authority on the subject chosen for his discussion.

A novel feature has been added to the program this year in the presentation of some of the manuscripts on osteopathic technic. A few of these are to be followed by demonstration of the technic described and the audience will be permitted to ask questions. We believe, in this way, we can more closely confine our program to "Truth—What is the Truth?"

COLLIN BROOKE, D.O.

Andrew Taylor Still

Andrew Taylor Still left us twenty-one years ago this month. He belonged to an age during which the last dividing lines between the industrial and cultivated seaboard and the savage and inimical frontier, were broken down to make one united continent. Through to his last days he carried the sturdy and temeritous character fostered by the frontier; a character born and bred in those men who grew up literally with weapons in their hands ready to do battle with redskin tribes, and able to resist on its own ground and within its own race, the sallies of those squatter bands who stole from under a man the land he had staked.



Founder of Osteopathy
1828 — 1917

A few years devoted to Civil War service in his thirties did not alone account for the predominance of this motif in the Old Doctor's thinking. He had been sired by this tradition—if so young a country may possess one—of fighting for one's existence. When Dr. Still was born, America had been at war for more than 200 years. Interrupted by truces of varying lengths, the struggle between the white men and the red had gone on through those generations for possession of this continent. The strife was not only inter-racial; the various white nations also had engaged in bloody conflicts to determine proprietorship of the New World. Here, as elsewhere on earth, war always had been; would always be. Boys naturally expected to be soldiers. In short, there were tangible things to be overcome by Dr. Still and those who, like him, shared in the banishing of the last physical frontier in this United States.

Professionally as well, Dr. Still's life was such a continuous round of conflict that the language of the soldier, of battles, of campaigns, remained naturally and inevitably his. The struggle did not end when osteopathy evolved as a full-fledged school of practice, with a college in which it was taught. It did not end with the organization of the American Osteopathic Association. It did not end with the passing of Still. There have been lulls and there have been truces in this warfare, but today is not the day of pause or armistice.

Twentieth century civilization has witnessed the disappearance of the wilderness from our back doors. It has tended to multiply people's comforts and to increase certain of their rights. Yet there are human beings who undergo chronic illness and physical hardship because in not all of this country has there been established by education and by law the right of every citizen to the most natural, most scientific, health care and treatment which can be developed.

It has remained for Dr. Still's concept of osteopathy to bring forth the tangible means to enable it to reach out into the morasses of human misery and banish them; means to help it win over an unfertile wilderness and make human life flourish thereon. This power to grow is implicit in the rugged concept of osteopathy. Still was aware of that when he incorporated his beliefs into the doctrine we now know by that name. Its survival depends upon our efforts as they are turned into thoughtful cooperation, organization, research and legislation.

Well may we wish for some of the courage displayed by the winners of the West, when we face some of osteopathy's problems today. And that spirit finds its truest culmination, perhaps, in the figure of the Old Doctor, who added to its fiery alertness and determination, experience in discipline and an understanding of the value of organized cooperation.

Fortitude was characteristic of the frontiersman; but so was wariness and that sense of proportion which did not admit of overconfidence resulting from success. Still suffered his defeats, but also he knew the taste of victory, the joy of triumph. Yet he was too wise and too experienced a man to let those things dull the keen edge of his weapon or his strategy.

If he had lived to see his followers, outnumbered twenty to one, beating the enemy to a standstill as we did in the basic science battle in sixteen legislatures two years ago; if he had lived to see the Burke-Drew amendment adopted without a dissenting vote in either house of Congress, signed by the President and put into effect; if he had seen the other evidences of triumph, won as the result of close-knit organization and well laid plans, is it unreasonable to believe that he would still have warned us of the dangers of overconfidence and the perils of success?

One year ago we said in these columns that osteopathy "has established itself firmly in the laws of all the states." So it seemed, at least so far as practice acts go. Recent legislative efforts, recent administrative orders, recent court decisions, keep us alive to the dangers which still threaten, and the contempt with which not bureaucrats alone, but even an occasional state supreme court, hold the statutes which have protected the health rights of the public for decades. These things by no means eclipse our victories, but they moderate our elation. And they renew in us a determination to battle on, as uncompromisingly as even Dr. Still would have done, to free America from the domination of the political machinations of an outworn healing cult.

RAY G. HULBURT, D.O.

THE JOURNAL OF THE
AMERICAN OSTEOPATHIC ASSOCIATION
Published monthly by the American Osteopathic Association

Publication Office, 1140 Lake Street, Oak Park, Ill.
Editorial Office, 540 N. Michigan Ave., Chicago, Ill.
Address all communications to the Chicago Office
Cable address: "Amerosteo"

RAY G. HULBURT, D.O. ..... Editor
R. E. DUFFELL, D.O. ..... Assistant Editor
CLAYTON N. CLARK, D.O. ..... Business Manager

EXECUTIVE COMMITTEE

PRESIDENT ..... ARTHUR E. ALLEN, Minneapolis
PRESIDENT-ELECT ..... FRANK F. JONES, Macon, Ga.
PAST PRESIDENT ..... EDWARD A. WARD, Saginaw, Mich.
CHAIRMAN PROFESSIONAL AFFAIRS ..... P. W. GIBSON, Winfield, Kans.
CHAIRMAN PUBLIC AFFAIRS ..... F. A. GORDON, Marshalltown, Iowa
EXECUTIVE SECRETARY ..... R. C. McCAUGHAN, Chicago

Subscription - - - - - - - - - - Five Dollars a year in advance

Vol. 38 December, 1938 No. 4

AN AID TO CALCIFICATION OF BONE

The need for osteopathic manipulative therapy in fracture cases may be founded some day on indisputable scientific facts. At present many osteopathic physicians are convinced that manipulative treatment directed to regions of the spinal column from which arise the efferent nerves supplying trophic and motor impulses to muscular tissue of a fractured extremity aids the healing process; that is, all other conditions being equal, the bone injury heals faster when there is such manipulative treatment of the spine than when there is not.

This belief, based to a great extent on clinical experience, can without doubt be substantiated by scientific experiment if someone in the profession will undertake to carry out the meticulous research work necessary. A hint as to the method by which this may be done is found in a recent article in *Surgery, Gynecology and Obstetrics.*[1]

The writer, Harry C. Blair, M.D., develops a theory that alternating ischemia and hyperemia promote normal calcification of bone and aid in the healing of fractures, also that this alternation of blood flow is dependent to a great extent upon the contraction and relaxation of muscles.

The maxim, "use of a part will heal a fracture because it increases the circulation," has been accepted for some time without question. Now we may learn from this article the probable mechanism by which increased circulation aids fracture healing; also, that increased circulation does not necessarily involve hyperemia, which condition may be decidedly harmful. An understanding of the process involves a knowledge of the anatomy of the blood supply of bones and muscles, the effects of muscular contraction, and the state of phosphorus-calcium balance and hydrogen-ion concentration in blood and other tissues in the fracture region.

In considering the anatomy of the blood supply to bones, Blair points out that arteries entering the shafts of long bones are derived from branches supplying muscles and are subject to the same changes that affect muscular arteries during muscular contraction. When muscle contraction takes place, the muscles change their form and contour. This causes pressure on the limiting membrane and on the periosteum covering the bone. The author gives the following example:

> When we stand, the pressure on the soles of our feet produces an ischemia. When we walk, the activity of our muscles produces alternating ischemia and hyperemia of the lower extremities by the pressure caused by the change of form and contour of the muscles, by the traction on joint capsules and ligaments and periosteum, and by mechanical pressure against muscular arteries and their associated arteries which supply the periosteum and bone.

This idea that vigorously contracting muscles produce an internal pressure is not new. But recently investigators[2] in muscle physiology have gone a step further; they have shown that good muscle tone alone may produce sufficient pressure to maintain circulation. In other words, they are of the opinion that the tonus influencing the circulation of the blood is not merely the tonus of the blood vessels—arteries, capillaries or veins—but, in addition, the tonus of the tissues through which these vessels pass. In estimating the intramuscular pressure in man, these investigators chose a muscle in a state of low tonus—that of the biceps humeri in relaxation. A hypodermic needle of No. 20 gauge was inserted into the body of the muscle and the force required to inject a small amount of normal saline was measured on a manometer. They noted that if the slightest tension was placed on the muscles, the intramuscular tension was increased markedly.

In illness or after surgical operations tonus is greatly lessened. Loss of tonus takes place also when a cast is applied. The muscles soften and lose their normal resiliency. A comparative hyperemia ensues. The blood flow is not resisted by the contraction of the muscles, and the venous blood is delayed in its return. What effect does this have on the bone?

Grieg[3] has said:

"1. Maintain the circulation within certain limits and bones remain unchanged.

"2. Produce a definite hyperemia and bone undergoes rarefaction, decalcification, osteoporosis.

"3. Restrict the blood supply and bone undergoes consolidation."

Hyperemia, therefore, either traumatic or infectious, brings about decalcification. In the absence of abnormal metabolic states, this bone absorption apparently is the result of one thing—the lack of muscular activity. If an individual is confined to bed because of a broken limb, general decalcification of the skeleton takes place. In the fracture limb confined in a cast, muscle atrophy is marked, while in the uninjured extremity the atrophy is hardly discernible. According to Blair, the difference can be

1. Blair, Harry C.: The Alternation of Blood Supply as a Cause for Normal Calcification of Bone. Surg. Gynec. Obst., 1938 (Oct.) 67:413-423.

2. Henderson, Yaudell; Oughterson, A. W.; Greenberg, L. A.; and Searle, O. P.: Muscle Tonus, Intramuscular Pressure and Venopressor Mechanism. Am. Jour. Physiol., 1936 (Jan.) 114:261-268.

3. Grieg, David M.: Clinical Observations on the Surgical Pathology of Bone. Oliver and Boyd, Edinburgh, 1931.

accounted for neither by weight-bearing, nor stress and strain, but only by the fact that there is a difference in muscular activity of the parts involved.

The state of the phosphorus-calcium balance and hydrogen-ion concentration in blood and other tissues is important. For an explanation of this we again quote Blair as follows:

> The hydrogen-ion concentration of blood is known to vary little during health on account of buffer substances which hold the reaction close to 7.35, any great variation being incompatible with life. It is conceivable, however, that tissues and tissue fluid reactions vary to a greater extent during ordinary metabolic activity. Alternating ischemia and hyperemia, therefore, can produce a comparative alternation in the hydrogen-ion content of tissue fluids. It is assumed that during a rest period when muscles are relaxed, particularly immediately following exercise, when arterial flow is markedly increased, a swing toward the alkali side is taking place. Phosphatase acts best in hydrolysis of the phosphoric ester in an alkaline medium. At this period inorganic phosphates should increase in the tissue fluids. Muscular contraction taking place produces an ischemia, a lower hydrogen-ion concentration, and as a more acid reaction develops, more calcium is ionized and the tissue fluids are able to hold in solution a higher supersaturation of calcium. As muscular relaxation takes place and the swing is again toward a higher hydrogen-ion concentration, the law governing difficultly soluble salts causes a precipitation of the complex bone salt, composed of calcium carbonate and calcium phosphate.

The practical clinical application of this knowledge of the requirements for bone repair is evident. Various physical therapy methods have been used to increase circulation. Among these, heat, massage, contrast baths, and alternating suction and pressure are discussed by Blair. Since heat causes hyperemia, which in turn produces resorption of bone, the use of this modality is apparently not indicated. Seemingly in contradiction to this, Voshell,[4] who treated thirty-eight cases of delayed union in different bones by diathermy, reports success or bony union in 78.9 per cent of the cases. Most of the cases required ten or more treatments before improvement was noted.

Murray[5] gives the postreduction and postoperative procedures in use at the Presbyterian Hospital of New York as follows:

> Elevation of the affected part, sedative massage of the whole extremity, constant low degrees of heat by means of low milliamperage, and muscle stimulation through some form of sinusoidal current. Whenever possible this procedure is used in conjunction with counterbalanced suspension and active mobilization of the part by the patient. Early underwater exercise is recommended. . . .

From the theoretical viewpoint, osteopathic manipulative treatment for the purpose of maintaining an undisturbed flow of trophic and motor nerve impulses to the muscles involved in the fracture, to assure normal nutrition and tone, should be the therapy par excellence. Can we say definitely that osteopathic therapy does result in more rapid healing of fractures? The consensus of osteopathic physicians, based on clinical experience, would undoubtedly be in the affirmative, but there is little or no scientific experiment to prove it. Here is a line of osteopathic research which, if carried to completion, would aid in determining the osteopathic position. In hospital practice fractures are common; x-ray apparatus is available and the expense of making pictures is negligible. The effect on bone tissue of osteopathic manipulative treatment given after reduction or postoperatively to the spinal regions segmentally related by nerves to the muscles involved in the fracture, could be checked by roentgenograms. The rapidity of callus formation could be observed and proper records kept. The controls, of course, would be those cases in which manipulative treatment was not administered. Many factors influencing the rapidity of callus formation would have to be taken into consideration, such as age, sex, nutritional state of the patient, etc., but a method of classification probably could be worked out.

Perhaps the line of research suggested here has already come up for consideration in one or more of our osteopathic hospitals and has been abandoned for one reason or another. However, this is but one of the many research problems which are crying out to be solved. If we are to substantiate our assertion that osteopathic manipulative therapy is beneficial in all conditions, we must have scientifically acceptable experiments to prove it.

R. E. D.

4. Voshell, Allen F.: Delayed Union in Fractures, Arch. Phys. Therapy, 1937 (Sept.) 18:561-564. Referred to in Year Book of Physical Therapy, 1938, Year Book Publishers, Chicago.

5. Murray, Clay Ray: Immediate and Early Physical Therapy in Fracture Management. Arch. Phys. Therapy, 1938 (Feb.) 19:74-78. Referred to in Year Book of Physical Therapy, 1938, Year Book Publishers, Chicago.

THE LEGISLATIVE SITUATION

Congress and a large majority of state legislatures will be in session next month. Osteopathy will be fighting offensively and defensively on many an advanced front. Some victories will be gained, some defeats suffered, and over and over again there must be weighed the question of the price to be paid. The cost of gain or of victory will be paid in various kinds of coin. In some instances it will be compromise, in others skilled diplomacy, in others simply unyielding adherence to principle backed up by days and nights of toil, to the underlying principles which will not be sacrificed no matter in what coin we pay.

As we go into 1939 let us remember the terrific defeat which our united front was able to administer to those advocating basic science legislation before sixteen legislatures two years ago. Let us remember that over the protests of an alert American Medical Association last spring the Burke-Drew Amendment passed both houses of Congress without a dissenting vote and was signed. Let us remember that all through the years we have accepted less than was our due because too often we measured our strength by our numbers and underestimated our power.

At the time of writing, four osteopathic legislators have been reported as elected this year—three of them re-elected. As an evidence of the temper of the people who voted for these men, it is interesting to study what went on in Kansas. The supreme

court there recently rendered a decision which the osteopathic profession contends was based upon incomplete and erroneous information and which they allege was not in keeping with the facts which might have been brought out had a commissioner been appointed by the court to take testimony. Be that as it may, the ruling of the court was to oust an osteopathic surgeon from the practice of medicine and surgery under the medical practice act.

Our information is that in Kansas three M.D.'s, as well as three osteopathic physicians, were nominated for the legislature. All M.D.'s were defeated.

The one osteopathic physician who was elected completely out-distanced the other candidates of his party and won by what the newspapers report was the heaviest plurality ever recorded in the district. This was in spite of a house to house distribution of opposition literature throughout the district, including attacks upon the doctor's profession. He carried every precinct, according to the unofficial report, even the home precinct of the M.D. who formerly represented that district in the legislature and who was chairman of the Public Health Committee.

One osteopathic candidate who lost only because of the Republican landslide in Kansas, carried as a Democrat 20 of the 29 precincts in a normally Republican county, and lost by 178 votes although the primary showed 800 more Republicans than Democrats registered.

In the face of such legislative victories as have been achieved in the past two years, and such returns as osteopathic candidates achieved in this election, it will be easy to become over-confident and to permit possible victory to swing into disastrous defeat.

THE COLLEGES—II

Osteopathic education is in a transition period, with four of the colleges now requiring two years of preosteopathic college work and the other two announcing that they will do the same within the next two years. Some of the basic science work which has been done in the first year or two of professional school will now be done earlier, leaving more time after matriculation to be devoted to other subjects.

It is our observation that a practically unanimous sentiment in the profession demands more and more time for undergraduates and graduates alike in the study and even the development of the tenets which are distinctive of the osteopathic school, and the maintenance of the concepts which have made osteopathic physicians and surgeons outstandingly successful.

As a profession, we have been too much grooved, so to speak. The increased preliminary requirements give us extra time in the professional course, and we need to spend that time in expanding and making wider applications of the principles underlying osteopathy than has ever been done before. In almost every field where those principles have been applied through osteopathic manipulative technic, they have made for success. Such failures as there have been (and there have been too many) were not of the osteopathic principle, but of its technical application at our hands. And, as suggested, its application has been too much grooved—not wide enough.

We have been too smugly complacent with the success we have achieved—a success which has seemed truly phenomenal in comparison with other systems of medicine, but which is not so wonderful in the light of the actual potentialities of osteopathy, or when we remember Dr. Still's repeated statement that he only had the squirrel by the tail and that it was up to his followers to pull it out of the tree.

Let us draw a comparison from surgery. Experience with neoplasms in other parts of the body made it certain that if ever a way were found to cut them out of the brain, there would be a tremendous advance. It took surgery a long time to develop a cautery that would perform that task. But when it was invented, there followed the obvious result which had been foreseen.

There still are great advances to be made in osteopathic manipulative diagnosis and treatment, and to this end, it is necessary to develop in our students, in their "spare" time which the increased entrance requirements give to them in their professional course, a scientific research approach to their problems that will lead to some of those advances.

Some will object at once that students cannot do research work. But the simpler techniques of research are not over their heads. And it is the avowed intention of the colleges thus to occupy at least some of the extra time now available. Their developing curricular arrangements already indicate their intentions in that direction. No more useful field for such research could be imagined than that of the effects of osteopathic manipulative technic. In fact, there is in this field study enough for all of us. With osteopathic education traveling this road, it will be necessary to add more teachers in the department we have just been considering, a field where there are all too few instructors. If it be true, as so frequently has been alleged, that a too large proportion of osteopathic physicians now in the field are physically incapable of administering, or unwilling to administer, the most skillful form of osteopathic manipulative measures in diagnosis and in treatment, then well may it be expected that this opportunity for loosening up the curriculum and emphasizing the fundamental principles of osteopathy will result in a more intensive training of many students in the intelligent use of their tactile sense and in the proper correlation and use of their muscles, so that the schools will turn out a far greater proportion of osteopathic physicians against whom that accusation, "they can't treat," cannot justly be made.

It is sometimes said that those entering osteopathic colleges at the present day, with much more

schooling than the pioneers had, lack the conviction of the earlier people; that they have learned just enough science that they are not amenable to facts as simple as those of osteopathy; and that therefore they come in with a skeptical mind. The truth is that, more important than the two or more years which they have spent in the study of the elements of some science, is the fact that they actually have acquired a working knowledge of the study of a science. They have been trained in scientific methods of study. Osteopathy lends itself to a mind so trained. Teaching on that basis will survive a great deal longer than will the kind which makes its appeal to the student on an emotional basis, or the enthusiasm of the immature.

To the person educated in the modern way, osteopathy becomes not merely a routine of technic —technic learned by the device of imitating a master. It becomes, instead, a personally worked-out principle applicable to a constantly wider and wider field of demonstrated pathology.

This is a reminder, by the way, that there is in the profession more frowning upon so-called "adjuncts" than ever before, apparently because, with a better understanding of the fundamental sciences, most of such "adjuncts" have been found to be useless. Many of them were adopted earlier on a basis of sentiment, but they did not stand analysis in the crucible of scientific knowledge such as the osteopathic physician must have.

On the contrary, the more we subject osteopathy to the light of modern knowledge of physiology and of immunology, the better osteopathy looks and the more reasonable it is seen to be. Only the invincibly ignorant, or the inept and careless, can fail to see success in osteopathy.

Now to continue with the thought: In the old days it was possible to depend chiefly for filling our colleges upon an enthusiastic crowd who came purely on faith (well-founded though their faith in osteopathy was), because every layman was well convinced that doctors could do many things which as a matter of fact, doctors could not then and never could do. People in those days believed that health depended almost entirely upon doctors and not upon the conduct of the people. The fact that doctors of one school had failed them did not in the least dampen their belief that some doctor could save—and the so obvious success of osteopathy in so many cases simply served to strengthen that conviction. With all our modern education of laymen concerning medicine, one thing sure is that more and more people are honestly and perhaps justifiably skeptical as to the ability of physicians. This in no way contradicts the statement that college-trained people, educated in modern methods of scientific thinking, will recognize the logic and the truth in osteopathy more thoroughly than will those without such training.

We would not for a moment question the fact that osteopathy in the past did profit by having come into it those who had been well sold on osteopathy from personal experience or observation. That is good as far as it goes, but the profession must not be dependent entirely upon that group. We are now to go for students into the field of those who are interested in osteopathy because it is scientifically interesting.

While our colleges are not unequipped to handle that class of students, yet to whatever extent they do lack proper equipment, they must devote themselves to remedying such defects. This is the only way the colleges can maintain themselves among institutions of higher learning. Osteopathy can survive and even thrive in that class. If it could not, it would not deserve to survive.

After all, is it too much to say that student recruiting, or vocational guidance, is only one phase—and by no means the predominating phase —of our educational problem? This thought is vitally important in connection with the work of the Committee on Public and Professional Welfare. That committee has as one of its objects the instruction, and development of enthusiasm on the part of, you and me and the rest of the osteopathic profession. Also it has to make the public conscious of osteopathy in its varied phases and aspects.

May it not be that if the work of the Committee on Public and Professional Welfare is one-half as successful as it ought to be it will create a demand for osteopathy in the industrial world, the insurance world, the educational world, the athletic world, and the world of public health—a demand for osteopathy such that the schools will find themselves in a most embarrassing position because of their inability to fill that demand? If that state of affairs should come about, then surely we would find that our student recruiting problems, so long as the capacity of our colleges is what it is now, would more than take care of themselves.

As any one who is actually in touch with the situation tries to visualize osteopathic education today in comparison with what it was even a decade ago, he sees a tremendous development. There is more osteopathic education. There is better osteopathic education. The education given in our colleges is more osteopathic. We are turning out not only more, but also better, doctors of the osteopathic school of practice. We have faculties that are more alive, that are better prepared, that are paying more attention to their own educational advancement. The colleges themselves are striving hard to develop support on the part of the public, and perhaps primarily on the part of their own graduates. Such support must be well and carefully planned, and must be directed toward the true fundamentals of the problems facing, not the colleges alone, but the profession as a whole.

There are other aspects of the questions now facing the colleges which it is planned to discuss in forthcoming numbers of THE JOURNAL.

R. C. Mc. and R. G. H.

Department of Public Affairs

F. A. GORDON, D.O.
Chairman
Marshalltown, Iowa

BUREAU OF INDUSTRIAL AND INSTITUTIONAL SERVICE

JOHN P. WOOD, D.O.
Chairman
Birmingham, Mich.

"LABOR CONTACT"

This message is directed primarily to the presidents of all divisional societies of the American Osteopathic Association. It is hoped and urged that the presidents will see to it that Labor Contact Committees are appointed in their individual states and provinces to the end that a closer friendly relationship will come about between organized osteopathy, as represented by the various divisional associations, and organized labor as represented by the various unions.

The Labor Contact Committee of the American Osteopathic Association, a subcommittee under the Bureau of Industrial and Institutional Service, was organized somewhat over a year ago for the purpose of directing such activity throughout this country and Canada. Since legislation will undoubtedly be passed in a number of states during this coming year to provide for some form of socialized medicine, it is imperative on our part that the machinery for contacting organized labor be immediately set up in those states where a working committee has not already been formed. It is definitely to the advantage of labor to see to it that the freedom of choice of physician is maintained. This applies not only to any form of socialized medicine which may be enacted, but also to compensation law amendments which may contain limiting or qualifying clauses whereby labor may be deprived of the opportunity of employing the services of osteopathic physicians and surgeons.

In the State of Michigan, which is highly industrial, and also highly unionized, a Labor Contact Committee is now at work contacting responsible officials of the various unions toward a better understanding of problems which have a common bearing on both organizations. The membership of this Committee consists of men located in the industrial cities of the state, who have had the experience and training to approach properly the responsible union heads. The organization in Michigan undoubtedly will derive a real benefit from this contact as will organized labor.

Let me again urge the divisional society presidents who have not done so, to set up a Labor Contact Committee now that will be an active working committee and whose membership has the ability and aptitude for putting over this program.

Dr. Albert E. Chittenden, 50 Goff St., Auburn, Maine, is the Chairman of the Labor Contact Committee of the American Osteopathic Association, and it is suggested that reports of state progress along this line be made direct to him. Let's be prepared.

J. P. W.

THE NEED FOR COMPENSATION STATISTICS

Many chairmen of state committees of industrial and institutional service have done valiant service during the past year in arousing interest in the collection of case histories of compensation cases.

Oregon tops the list with the greatest number of case histories sent in. Congratulations—Oregon! Washington, Louisiana, Texas, Vermont and Massachusetts are to be complimented upon the effort made by their chairmen and the large number of reports returned. This year, Dr. C. C. Auseon, chairman of the Michigan committee, has already sent out 500 report blanks to the members of his state. What is the chairman of your state doing? Case report blanks can be had for the asking. Just send a card to the address shown.

Let us have at least 5,000 case histories of back injuries before the next national convention. With your cooperation these can be obtained.

The friendly feeling of insurance companies toward the osteopathic profession is being manifested in many communities. Every day letters arrive at the Central office and are received by members of this Bureau to convince us of this fact. However, only a beginning has been made. The general acceptance of osteopathic physicians for industrial work is not far away.

It is estimated that the total expenditure of the Compensation Commissions of the United States for medical and hospital fees amounts to $119,000,000 a year. The total indemnity paid to injured employees amounts to $112,000,000 a year, making a grand total of $231,000,000 a year.

If back injuries account for 10 per cent of all injuries, we can estimate conservatively that their cost is at least $25,000,000. It is probably higher. Fifteen million dollars is probably spent each year for medical fees for back injuries alone. This is an appalling amount.

The statistics gathered by this Bureau have shown that if the cases of back sprains alone were sent to osteopathic physicians, the reduction in total cost of these cases would be great, a conservative estimate being at least 50 per cent.

A saving of from twelve to fifteen millions of dollars a year in medical fees and indemnity costs should be welcome to the insurance companies of America, which, in turn, would pass at least a generous part of the saving back to industry. I am certain this is possible, if they are convinced of the value of osteopathic care. The osteopathic profession will benefit accordingly.

The hope that this will come true depends upon the gathering of reliable case histories of compensation cases from the members of our profession. Have you sent in your case histories? If not, won't you take an hour or two off to do so, or have your secretary do it, filling in the case report blanks that this Bureau is willing to send to every D.O. who will ask for them? Just send a card to the address below.

J. J. McCORMACK, D.O.
720 New York Ave.
Sheboygan, Wisconsin

BUREAU OF PUBLIC HEALTH AND EDUCATION

JAMES O. WATSON, D.O.
Chairman
Columbus, Ohio

UTILIZING THE WOMEN'S AUXILIARY

It is impressive to note that each issue of THE JOURNAL contains a lengthening list of radio stations broadcasting material relating to health problems under the sponsorship of the Committee on Public and Professional Welfare of the American Osteopathic Association, and the divisional societies. Millions of people in all walks of life are paying attention for the first time to the word "osteopathy," and the term "osteopathic physician and surgeon." Many of them have little or no understanding of what osteopathy means nor of the therapy that the osteopathic physician and surgeon commands. Having reached the listening ears of millions of citizens, we are faced with the mammoth task of making authentic material of a more detailed nature available to them. Our resources must needs be surveyed to find means of accomplishing it.

In Ohio, we have developed a new resource or one, at least, not heretofore exercised in this direction. I refer to the organization of the Women's Auxiliary of the Ohio Society of Osteopathic Physicians and Surgeons. This group, comprised of the wives of osteopathic practitioners in Ohio, is set up in exact parallel to our state association. It is divided into district or sectional groups corresponding to

the sectional groups of the state association and meets, of course, each month at the same time and place as the professional group meets. Likewise, the Women's Auxiliary Group hold their state-wide meeting at the same time and place as the annual convention of the Ohio Society of Osteopathic Physicians and Surgeons. Although this organization is only recently organized, with characteristic efficiency known to womankind it has set as its objective the placing of at least one copy each month of OSTEOPATHIC MAGAZINE in every public library, high school library, and college library in the State of Ohio. This new organization in Ohio I believe to be an important step towards the education of the public at large concerning the osteopathic profession. It fits nicely into the program of the Committee on Public and Professional Welfare. Every state that has an osteopathic organization should foster the formation of its natural helpmate, the women's auxiliary.

Mrs. Charles M. LaRue, 1460 East Broad Street, Columbus, Ohio, is the President of the women's auxiliary in Ohio. I am sure she will be glad to cooperate with interested groups in other states in supplying them with the details of her organization efforts in connection with this activity.

J. O. W.

COMMITTEE ON SPECIAL MEMBERSHIP EFFORT

FRANK E. MACCRACKEN, D.O.
Chairman
Fresno, Calif.

DIRECTORY TO PRESS SOON

Superlatives characterize our report. We have a more efficient and a larger number of members engaged in the work of this Committee than ever before. We have the largest booked membership, 5,845, but we still have altogether too many delinquents. According to the By-Laws of the Association, the service given to these members must terminate on December 1 and their names will not appear among the members in The Directory unless they pay.

Even after The Directory goes to press we can bank on our very efficient committee members in the various divisional societies to continue with their splendid work.

STATE HONORS

An analysis of our membership report as of November 1, 1938, shows that since August 1 there have been membership gains in thirty-five divisional societies. The three states in each group which obtained the three highest percentages of gain were:

GROUP A (Societies of more than 200)		GROUP C (Societies of 50-99)	
Texas	16.34%	Rhode Island	15.04%
Missouri	9.81	Tennessee	14.70
California	9.55	Oregon	12.19
GROUP B (Societies of 100-199)		**GROUP D (Societies of less than 50)**	
Colorado	12.90%	Utah	16.66%
Washington	9.72	Louisiana	10.00
Maine	8.45	Arizona	7.68

HONOR ROLL

The following members have secured the applications of one or more nonmembers and are included in the Honor Roll for November:

Drs. Annie Tupper Abolt, Greenville, Miss., Hazel G. Axtell, Providence, R. I., C. H. Baker, Seattle, Wash., Warren G. Bradford, Dayton, Ohio, W. C. Bugbee, Montclair, N. J., Albert E. Chittenden, Auburn, Maine, A. G. Dannin, Indianapolis, Ind., G. E. Darrow, Independence, Mo., D. C. Delbridge, Champaign, Ill., Walter B. Elliott, Atlanta, Ga., I. D. Gartrell, Clay Center, Nebr., Lois Goorley, Trenton, N. J., F. A. Gordon, Marshalltown, Iowa, Donald V. Hampton, Cleveland, Ohio, Evan T. Harvie, Los Angeles, Calif., J. L. Jones, Kansas City, Mo., Anton Kani, Omaha, Nebr., Samuel H. Laughton, San Diego, Calif., H. I. Magoun, Denver, Colo., R. D. McCullough, Tulsa, Okla., J. W. McPherson, Dallas, Texas, A. P. Meador, Hinton, W. Va., Allen S. Prescott, Syracuse, N. Y., H. L. Samblanet, Cleveland, Ohio, Herman Shablin, Kansas City, Mo., F. B. Shain, Chicago, Ill., Irving J. Shalett, Lewiston, Maine, Karnig Tomajan, Boston, Mass., Marian E. Tracy, Philadelphia, Pa., Floyd J. Trenery, Los Angeles, Calif.

1939 A.O.A. CONVENTION—DALLAS

Public Relations Committee

CHESTER D. SWOPE, D.O.
Chairman
Washington, D. C.

W. P. A. REPORT OF TREATMENT FORMS

The reproductions on page 209 are published for their educational value. They represent Special Form C.A. 16 (front and back) issued by the United States Employees' Compensation Commission. This form is the authorization for treatment of a W.P.A. employee and will be presented by the employee to the physician at the time of request for treatment. These forms are not distributed or available to physicians except upon presentation by W.P.A. employees.

Department of Professional Affairs

P. W. GIBSON, D.O.
Chairman
Winfield, Kans.

BUREAU OF HOSPITALS

PAUL T. LLOYD, D.O.
Chairman
Philadelphia

OSTEOPATHIC HOSPITALS APPROVED FOR INTERN TRAINING

At the annual meeting of the American College of Osteopathic Surgeons in Cleveland, October 3 to 5, the final steps were taken in the joint approval by the American Osteopathic Association and the American College of Osteopathic Surgeons, of osteopathic hospitals as teaching institutions. The College voted its acceptance of the findings of the joint examining committee, which the American Osteopathic Association, on its part, had approved at Cincinnati. The list of approved institutions is as follows:

Bashline-Rossman Osteopathic Hospital, Grove City, Pa.
Chicago Osteopathic Hospital, Chicago, Ill.
Cleveland Osteopathic Hospital, Cleveland, O.
Des Moines General Hospital, Des Moines, Ia.
Detroit Osteopathic Hospital, Detroit, Mich.
Fenner Hospital, North Platte, Nebr.
Gleason Hospital, Larned, Kans.
Kirksville College of Osteopathy & Surgery Hospital, Kirksville. Mo.
Lakeside Hospital, Kansas City, Mo.
Lamb Hospital, Denver, Colo.
Laughlin Hospital, Kirksville, Mo.
Los Angeles County Osteopathic Hospital, Los Angeles, Calif.
Massachusetts Osteopathic Hospital, Boston, Mass.
Monte Sano Hospital, Los Angeles, Calif.
Northeast Hospital, Kansas City, Mo.
Philadelphia Osteopathic Hospital, Philadelphia, Pa.
Rocky Mountain Osteopathic Hospital, Denver, Colo.
Southwestern Osteopathic Hospital, Wichita, Kans.

OSTEOPATHIC HOSPITALS WOULD PREVENT DISCRIMINATION

A standard rate of fees for hospital services to be paid for by the United States Employees' Compensation Commission was agreed upon in July, 1935, between the commission and the "joint committees of the National Hospital Associations," representing the American Hospital Association, the Protestant Hospital Association, and the Catholic Hospital Association. In connection with this, the executive committee of the Associated Hospitals of Osteopathy, meeting in Cleveland October 4, 1938, adopted the following resolution:

"Resolved, that the Associated Hospitals of Osteopathy accept the rates as set forth by the agreement of 'The Joint Committees of the National Hospital Associations' with the Federal Employees' Compensation Commission for hospital care given compensation cases under the Works Progress

Special Form C. 6c'16
July 31, 1935

REQUEST FOR TREATMENT OF INJURED EMPLOYEES OF THE WORKS PROGRESS ADMINISTRATION

Employees of the Works Progress Administration will be provided with medical, surgical, and hospital treatment only for traumatic injuries sustained in the performance of duty. This request for treatment authorizes the physician or hospital addressed to furnish treatment only if the condition presented may reasonably be attributed to the traumatic injury described below. Traumatic injury is defined as "injury by accident causing damage or harm to the physical structure of the body and shall not include a disease in any form except as it shall naturally result from the injury."

.....(Date), 19.....

To .....(Name of hospital or physician) .....(Address)

The bearer, ...(Full name of injured employee) Age ..... Sex ..... Color .....

is an employee of the Works Progress Administration employed as .....(Occupation)

at .....(Name of office, establishment, or project where employed) .....(Location)

He was injured in the performance of duty on .....(Date), 19.....

Nature of injury for which treatment is authorized .....

.....

.....

Treatment is requested for the direct results of said injury.

Reasonable fees for services rendered by private facilities pursuant to this request will be paid by the United States Employees' Compensation Commission upon presentation of charges therefor prepared on Form S–69. *Medical fees will be paid at rates not in excess of the minimum charges prevailing in the community for similar services.* Hospital charges will be allowed only at rates for ward service, except where use of a private room is absolutely necessary because of the patient's condition.

Hospital and physician charges, the latter accompanied by a current medical report of the case, should be submitted at the termination of treatment or monthly.

.....(Signature of official superior)

.....(Title of official position)

.....(Address)

(The report on the back of this form to be completed by examining physician)

16—1949

PHYSICIAN'S REPORT

U. S. EMPLOYEES' COMPENSATION COMMISSION
WASHINGTON, D. C.

1. Name of patient ..... Age ..... Sex .....
2. Home address of patient .....
3. Place of employment .....
4. Date and hour of your first treatment .....
5. Case history as stated by patient. Give date of accident .....
6. Give nature and extent of injury as found on your first examination and state your objective findings:
7. Is condition complained of due to accident described by patient? .....
8. Is this accident the only cause of disability? ..... If not, state contributing causes .....
9. Has patient any physical impairment due to previous injury or disease? ..... If so, describe .....
10. X-ray-laboratory-specialists' reports .....
11. Describe treatment given by you .....
12. Was patient hospitalized? ..... Name of hospital .....
13. Date admitted to hospital ..... If discharged, give date .....
14. Is further treatment needed? ..... For how long? .....
15. Will injury cause any permanent disability? ..... If so, what? .....
16. Patient {was / may be} able to resume regular work ....., 19.....
17. Patient {was / may be} able to resume light work ....., 19.....
18. If death ensued, give date .....
19. Number of treatments given by you at (1) office ....., (2) home ....., (3) hospital .....
20. Remarks (give any information of value not included above): .....

I HEREBY CERTIFY I am a duly licensed physician in the State of .....
and was graduated from ..... Medical School in the year .....

Date of this report .....

.....(Name)

.....(Address)

NOTE.—Official superior's request for examination or treatment (Form CA-16 or CA-17) must accompany voucher for medical services.

U. S. GOVERNMENT PRINTING OFFICE 16—1949

Administration." Another resolution adopted by the executive committee is as follows:

"Whereas it seems probable that the next United States Congress will appropriate government funds for the purpose of extending the availability of hospital services in the country, a part of the appropriation to be devoted to the erection of new hospitals and part to the subsidization of existing institutions:

"Be It Resolved: That the Associated Hospitals of Osteopathy request the American Osteopathic Association, through its proper agencies, to make every effort to prevent the elimination of osteopathic hospitals from such schemes."

BUREAU OF PROFESSIONAL EDUCATION AND COLLEGES

R. McFARLANE TILLEY, D.O.
Chairman
New York City

ASSOCIATED COLLEGES VOCATIONAL SURVEY

The rapid changes taking place in the field of vocational guidance are showing their results in various ways in osteopathic education. At Cincinnati the Associated Colleges formulated a plan for getting a master scale in connection with the Strong vocational test. The colleges are perhaps even now sending questionnaires to a thousand of their graduates with the object of building up this master scale. It is highly important that the physicians selected to receive this questionnaire should read the directions carefully, fill the blanks promptly, and mail them in.

The questionnaires are designed to provide a composite picture of the successful osteopathic physician, and they are being sent to representative doctors who have practiced at least five years, a fair proportion of whom are in the city and a reasonable number in the country, both general practitioners and specialists being represented.

The Strong vocational test was devised in 1927. It is being used in many high schools and junior colleges and by private vocational counselors.

The matter was brought to the attention of the College of Osteopathic Physicians and Surgeons, passed upon by the late Dr. Carle Phinney, and approved by the Board of Trustees who asked Mr. Thomas C. Schumacher, Executive Secretary of the California Osteopathic Association, to bring it to the attention of the Associated Colleges at Cincinnati where it was accepted.

This is a cooperative forward move by the colleges, and everyone receiving a blank is urged at once to fill it out and to forward it not to his college, not to the Associated Colleges, but to Dr. Edward K. Strong, 672 Mirand Street, Stanford University, California.

TRUTH

Where does truth lie? Not in numbers, for a small series carefully observed and recorded by a critical expert may mean more than several hundreds furnished by a team and analyzed by slide rule. Not in the magic of a name, for truth may lie in the contribution of the small-town practitioner, penned apologetically and hidden in the pages of a little read journal, rather than in the figures hammered out by platinum secretaries in the chromium laboratories of the million dollar professor. We must judge others, and the basic problem seems to be this,—how to recognize truth when we see it . . . Truth being a matter of intense conviction rather than exact proof, it can be reached by the spirit rather than the intellect . . . The more we cultivate truth ourselves, mix with truthful men, test the accuracy of our words before we speak them and of our writings before we let them go abroad . . . the more certain will be our instinct, the more direct our intuition. Blessed are the truthful, for they shall see truth. — W. H. Ogilvie. From *Surgery, Gynecology and Obstetrics,* November, 1938.

Diagnosis and Treatment

AN APPROACH TO PSYCHOGENIC DISORDERS

R. J. CHAPMAN
Senior Student, College of Osteopathic Physicians and Surgeons
Los Angeles

PART II

In our previous discussion we chose as our main topic a consideration of the class of the disorders of mental life in which the predominating etiological factors were apparently psychogenic. We chose this particular aspect of abnormal behavior because the material concerning it is somewhat controversial. Our aim has been to discuss and tentatively apply the more common conflicting interpretations, accepting those which seem most consistent with the facts. This led us to choose the purposive approach over the mechanistic as regards the most dominant factors in the "functional" mental disorders. Needless to say, in a consideration of this sort, dogmatism is entirely out of place, and complete freedom of speculation is in order. Our ignorance is so great that our conclusions can be no more than provisional working hypotheses.

To continue recapitulating, we found it advisable to first consider Freudian psychology. We did this, not because it is, in our opinion, the most tenable purposive school, but because it has probably received more attention than any other dynamic approach. In our sketch of the Freudian structure, as may be recalled, we found that several of Freud's views had occasioned considerable adverse criticism, and these criticisms we considered valid. In the hopes of correcting some of these defects, without forsaking the virtue of the system, we proposed the discussion of an approach which is, like Freud's, fundamentally purposive, but yet sufficiently eclectic to avoid the same mistakes. Integration, we said, is the keynote to such an approach, but before we begin our discussion of this integral psychology, I believe we may find it profitable to emphasize again the relationship between normal and abnormal reactions.

Inasmuch as no individual lives who may be deemed normal in all traits, it becomes apparent how difficult it is to draw a line between normal and abnormal. The various reactions of the abnormal individual are not essentially different from normal reactions in kind. The difference is only one of degree, and it is this that has led to the saying that abnormals are like us—only more so. We could cite any number of examples of mechanisms which are constantly used by the adjusted, the maladjustment resulting only from the excessive employment of the process, but this, we feel, is no less obvious than the fact that we must approach psychopathological problems through normal psychology. Each new experience causes a change in the personality. If this change is viewed as abnormal, it can, in many cases, be explained by the same laws that are used to explain normal behavior.

A second relationship which we must not forget is that the disease processes are explainable in terms of many etiological factors, each playing a definite part in the end result which is a long series of hereditary, congenital, and environmental components. The structural complexity of the adult organism, and the plasticity of the innate desires makes possible the development of a swiftly moving mind-body interrelationship which makes the establishing of cause or effect difficult, and also makes possible the formulation of a principle of medical psychology that whatever changes the bodily state may alter the emotion, mood, and conduct, and whatever affects the individual's mind for good or bad may alter the workings of the bodily organs.

In regard to changes in bodily state, we find the endocrinal diseases especially important. We are all aware of the mental states that accompany disturbances of the thyroid, pituitary, etc., as well as the personality

peculiarities of the eunuch, and the mental disturbances found during the menopause. The mind-body relationship was utilized by man when he developed such drugs as alcohol, morphia, hashish, and cocaine. Another example is the mental change which accompanies general paresis and other organic diseases of the brain. Here the personality changes appear, in many cases, long before the neurological evidence can be demonstrated, and in the full-blown psychoses there are various types depending upon the type of personality affected. All this is very obvious, but we mention it because it is a common clinical attitude of the physician to neglect exhausting these possible organic causes before proceeding to the dynamic aspects of the disorder.

Conversely, the part played by mental states in the production of bodily disturbances is so common that it should be an axiom with the physician, but strangely enough, it is appreciated by only a few. The effects of fear, disgust, anger, etc., upon the blood pressure, digestion, and the general metabolism have been thoroughly demonstrated by Cannon[1], and are common knowledge to all. Disorders of the "instinctive" mechanisms, particularly the reproductive system, exemplified by such conditions as impotence, frigidity, and menstrual disturbances are often emotional and psychological in origin rather than organic. The physician cannot afford to forget that fear in all its forms, disgust, anger, frustration, conflict or fatigue are to be looked for in all cases of visceral disturbance where an organic cause cannot be found.

There is one last point we should re-emphasize before we again become entangled in hypothetical dynamisms, and this is in regard to symptoms and classifications. Symptoms should not be confused with causes, otherwise the treatment may cure the symptom and let the disease remain. A symptomatological classification, although it serves a definite need, does not, in most cases, tell anything about the cause. To succeed in properly naming a disease is one thing, but to be able to prevent or cure it is quite another. For example, in chronic alcoholism the treatment is often directed towards the removal of alcohol, since excessive drinking is the primary symptom. In many cases, however, alcohol is only a means to an end, and is not the cause of the difficulty except indirectly.

INTEGRATION

Integration is the most fundamental attribute of any colonial organism, and it is only through this that the component parts may function in harmony. The nervous system is chiefly responsible for the maintenance of this cooperation, and this, in turn, is only made possible through the integration of the nervous system itself. In addition to the physical organization there are, in the system, certain inherent dispositions which, when mature, impel the individual to activity in the form of desires. Some of these strivings, as we have seen, have a physiological basis while others apparently do not; all, however, are purposive and work toward certain goals in relative independence of the rest. The methods through which the goals are attained, or the modes of expression of the impulsive forces, are dependent upon postnatal experience.

As a result of success, failure, satisfaction, frustration, pleasure, pain, etc., the innate desires become fixated upon certain objects through which they gain expression, or are turned away from other modes of gratification. It is by reason of this multitude of experiences that the individual develops various sentiments of liking, disliking, fear, hate, and respect for the various objects that have come into his course of maturation. Each sentiment may be an integration of several innate dispositions working in harmony.

The development of a unitary personality is the product of a long integrative process which is dependent upon both physical and purposive factors, but primarily the latter. This unity of harmony is only slowly and imperfectly achieved by virtue of the constant conflict of the sentiments with one another. If this conflict is to be kept at a minimum, the sentiments must be brought into a system wherein each becomes a member of a higher integration. This hierarchy of sentiments is controlled and dominated by a master sentiment which has the power to bring into subordination all the other sentiments and their impulses. McDougall[2,3,4] suggests that the only sentiment capable of harmonizing all the others is what he calls the sentiment of self-regard. In terms of affective dispositions, this sentiment takes the form of a devotion to an ideal of character. In terms of purposes or goals the striving would simply be towards that of being a character capable of choosing whatever line of conduct is most appropriate. In this state the individual, through frank self-criticism and reflection, is able to understand his motives to the extent that he may form a well-balanced estimate of his purposes, capacities, and duties.

This higher psychobiological integration we call "character," but there may be imperfections of character as a result of the master sentiment being devoted to such things as wealth or power, or there may be two or more master sentiments which are in perpetual conflict. This conflict, of course, threatens disintegration of the personality. The self-regarding sentiment is the most satisfactory because it is capable of supplying an overruling motive for all other conflicts or primitive desires, and also because it is capable of becoming synthesized with all other sentiments. A strong well-knit character is one that faces all problems and in every case chooses the appropriate alternative, the decision being based upon the dominance of the self-regarding sentiment which acts in the light of reason and moral principles, thereby bringing about a control of the other sentiments together with the crude urgings of appetite and desire.

We thus see that it is only through experience that the permanent structure worthy of the name individual can be formed. The inherited dispositions form the basis, and together with the acquired controls make up the superstructure. The emotions, however, are without fixed attitudes and can afford neither permanence nor order since they simply rise and fall as the desires urge their claims and reach their goals. It is chiefly by virtue of the plasticity of the innate urges that the development of such a superstructure is made possible.

Inasmuch as the motor mechanisms are subservient to the conative forces, we find the subordinations extending down through the sentiments and desires to a multitude of processes of adjustment of which we are relatively unaware. We merely become aware of the general nature of a situation and "will" the general nature of the response, all the rest being left to the subordinates. If the integration is complete, the subordinates work faithfully and in harmony under the direction of their respective superior processes, the entire organization being held under the dominance of the master sentiment.

The process of integration, we said, is a long and delicate one, and disintegration is likely to occur if situations encouraging conflict are too severe. In the event of this, the demands of the opposing impulses and sentiments tend to disrupt the hierarchy, the results being a dissociation of the association. We may range the dissociations according to the level in the hierarchy at which the splitting takes place. The most superficial dissociations would include dreams, hypnosis, functional paralysis, and simple anesthesias. Next the systematized amnesias, or still deeper a dissociation of a whole sentiment and the system of memories belonging to that sentiment. A whole system of sentiments may break up into independently functioning systems, or, in extreme cases, the master sentiment may undergo disruption with the result that its two fundamental dispositions (self-assertion and submission) become divorced, each forming the nucleus of a partial one-sided personality. This is very evident in cases of multiple personality in which there is a conflict of "wills" over the control of the motor mechanisms and sense organs through which our outer world relations are maintained.

So far we have failed to mention consciousness in relation to integration and disintegration. Prince[8] conceives of definite neural conditions which accompany conscious activity, and leave in the brain records or remnants called neurograms. Memory for past events is contained in these neural correlates and is subject to activation by either physiological or psychological states. Following activation, there may or may not be conscious experience. An example of this has been cited as follows: The sight of an insect in the jam may lead to a distaste for jam. A neurogram relative to this reaction is formed which may be activated later on, so that seeing flies at the dining table produces anorexia. In this case the original psychical situation (seeing the insect in the jam) is not reinstated because of faulty integration. These neural dispositions are what Prince calls the "unconscious," and are the basis for memory. When division of the whole system take place, each disposition or part functions as a whole, having its own psychical and purposive activities and retaining its own memories.

McDougall contends that, although this view is satisfactory for the minor dissociations or even alternating personalities, it will not do for the true cases of multiple personality in which the conscious personality not only knows what the other personality feels and thinks, but also has his own thoughts and feelings about the same topic. Remembering is more than to have an idea recur to consciousness. It is, in addition to this, to be aware of having previously thought of it. It is this recognition of past experience as one's own, as is found in multiple personality, that makes the interpretation on a purely integrative plane difficult. It would seem to imply that instead of there being a fragmentation of the single integrated self, there exists, in this split-off organization, a second self-conscious entity or true personality even though it be rudimentary. In other words, as Mitchell[9] suggests, any experience that passes out of consciousness must be conserved as a psychical disposition of some personality. If there is no dissociation, it, of course, remains with the normal personality, but if dissociation occurs, the experience is an integral part of another personality which may or may not appear in waking life. In no instance is there any mental material that is completely isolated from any personality.

This view leads us to interpret the minor forms of dissociation in the light of the major forms. For example, we have seen that in a major case of dissociation, such as true multiple personality, there are obviously two selves or egos, but in a case of a minor dissociation, such as hypnosis, this is not so apparent. Nevertheless, if we consider the agent that carries the post-hypnotic suggestion into effect as a subordinate, independently operating, secondary personality, rather than a train of ideas, we see that the same interpretation applies to the less apparent dissociations.

McDougall rationalizes this concept by postulating what he calls the monadic view of human nature. This is an attempt to reconcile the concept of a single integrated self, subject to disintegration, with the observation that in some cases of disintegration there is more than one self or personality. He does this by assuming that each unit in the integrated hierarchy is potentially, at least, an individual, thinking, striving self; some being more highly developed than others, depending upon their position in the system. Dominating the hierarchy is the supreme monad which each of us calls "myself." Thus, from the point of view of consciousness, we not only have the emotional and innate dispositional components of the sentiments, but also the corresponding thinking, striving, memory-producing components (monads). Each sentiment or part of a sentiment is, therefore, capable of existing as an individual organization in the event of disrupting of the normal integration. Needless to say, since the functioning of the system must take place through the sensory, motor and central mechanisms, dissociation or disintegration may result from damage to this tissue via organic disease, as well as psychologically.

To those who are inclined to be materialistic in their thinking, the monadic view may seem to be completely divorced from any practical applications. This is not so much the case, however, as with other theoretical views, since this view does not commit us to any single metaphysical theory. In addition to this, the integrative approach has an established neurological basis upon which we may rationalize organic disorders, all of which lends support to the hypothesis underlying the functional disruptions of integration.

Perhaps if we try to apply the theories to some of the symptoms of the functional mental disorders, it will aid both in clarifying and justifying the concepts.

COMMON, NEUROTIC PROCESSES

Janet[7] has long been interested in the various phenomena marking disintegration, and in his more recent writings makes considerable advance toward the theory of integration. Janet, however, believes that the cause of dissociation of mental life, and the resulting symptom formation, is a deficiency of energy which may be constitutional or may result from fatigue, strain, or shock. Although he observed that making neurotics work is often the most wholesome form of treatment, he failed to recognize that it is mental conflict, rather than poverty of energy, that causes the damage in most functional disorders. The recognition of this by Freud marked the essential advance over Janet's position. Freud, nevertheless, as we have seen, failed to gain any insight into the integrative process, due to his pansexualism.

Conflict is always a conflict of incompatible desires, whether they be simple strivings or well-organized sentiments. Conflict is energy-consuming, there being no form of mental activity so exhausting as the making of decisions, but even so, if the conflict is openly acknowledged, it is relatively harmless from the standpoint of disorder. It is the unrecognized conflict disguised by rationalization and repressed that is the primary source of neurotic troubles.

Repression is the process by which the conflict is obscured from consciousness. We may best think of the repressing force as being found within the sentiment of self-regard. This view is in harmony with Freud's ego functions. Repression may prepare the way for dissociation, but repression in itself does not terminate the conflict. Unless dissociation results, the conflict may continue to operate unrecognized and produce a drain on the energy. In this way, as we shall see later, we may account for the asthenia and lack of activity found in cases characterized by continued conflict without dissociation (for example, neurasthenia and schizophrenia). The word "complex" usually describes that which is repressed. The repression may be directed against an emotion or a desire (fear, sex, self-assertion, etc.) so that any sign of fear, lust, vanity, pride, ambition, authority, etc., as the case may be, is regarded with disfavor. On the other hand, it may confine itself to a particular object. A whole sentiment may, in some cases, be repressed, giving rise to a troublesome form of complex by reason of the multiplicity of tendencies involved, and the possibility of renewed activity through a great many channels. A well-integrated personality may avoid conflict by bringing about a subordination of the opposing dispositions by way of the self-regarding sentiment. If this is not adequate, however, subordination is resisted and the conflict passes out of recognition and becomes repressed.

We have mentioned that the process of dissociation, unlike repression, may terminate the conflict. There are other differences, which we may consider at this time, that should help us distinguish dissociative from repressive symptoms. In both cases the patient avoids all reference to the memory of the incident causing the conflict, but in dissociation it is more complete, the memory having completely dropped away. As would be expected, in repression we find evidence of continuing conflict as evidenced by the distress of the patient. In

dissociation, however, since the conflict has been resolved, we have no distress but rather an unnatural indifference. In the former case there would be disturbances in judgment, fantasies, etc., affecting the conscious personality. In the latter instance the conscious or normal personality may be abolished and replaced by the dissociated activity, or it may accompany conscious activity with "automatic activity." Lastly, we find repression coming on gradually, while dissociation is apt to be a sudden process. A good example of dissociation is amnesia. McDougall suggests that we may interpret the inability to execute motor acts (paralysis) or perceptual activities as simply conditions in which the patient has forgotten how to achieve these activities, and they are hence forms of amnesia. It is obvious, from what we have said, that neurasthenia is a condition characterized by repression and conflict, since we have none of the dissociative disabilities, such as complete amnesia, paralysis or anesthesia, hysterical fits, tics, somnambulism, etc., found in the hysterias. We must remember, nevertheless, that the relations between dissociation and repression are complicated, and in some cases the two types of disorder are not incapable of being combined in the same patient. In addition to preparing the way for dissociation, repression may maintain it. Belief is also a common factor in the maintenance of a dissociation.

A type of neurosis characterized by insomnia, irritability, digestive disturbance, palpitation, worry over trifles, etc., with no evidence of organic disease, is commonly encountered. In these anxiety states repression, dissociation, and amnesia are believed to play only a minor role. McDougall considers conditions of this sort simply as a manifestation of fear and anxiety as a result of the arousal of the desire to escape from fear-inducing situations, such as unemployment, poverty, illness, loss of personal attractiveness, etc. The chronic anxiety state results when it becomes apparent that escape is futile.

Concerning the symbolic and "conversion" symptoms, it is impossible that the energies liberated during an emotional conflict or shock fail to find natural outlets and overflow into the system of neurons in action at the moment. If the conflict continues, the pain, etc., is confined to this region. For example, a girl's right shoulder muscles are in action at a time when she is told her lover is unfaithful, and thereafter she suffers pain in that shoulder. Functional visceral maladjustments may have a similar genesis.

Although Freud regards regression as playing a part in all neurotic symptoms, it probably will be safer to confine the results of this process to the disorders in which there is a reanimation of infantile or childish modes of functioning involving the whole cognitive structure. There is little evidence of regression in the ordinary hysterical disabilities.

Situations may sometimes arouse self-reproach, from the self-regarding sentiment, as well as fear. In this way a sense of guilt is produced. If the conflict results in continued repression, the impulses giving rise to the effect may appear as phobias, compulsions, or obsessions. The inability to control the impulse giving rise to the affect is, of course, due to the repression. We think it is repression at least in the case of a phobia, due to the fact that the phobia is felt by the waking personality. The obsessions may serve as repression fortifiers by keeping an unpleasant thought out of the mind by continually thinking of another one. The compulsion may act as a protection or atonement for the sense of guilt arising from the repressed conflict.

PSYCHOLOGICAL TYPES

We have mentioned previously that the present state of our knowledge does not justify our recognizing any clear lines of separation between the various disorders. The factors going to make up a personality are so complex that it would be impossible to separate them into clearly defined classes. There are, however, certain peculiarities which, if well marked, enable us to classify individuals as belonging to certain, not sharply separated, types. The attempts at separating people into types has been chiefly on the basis of susceptibility to different forms of disorder, but, inasmuch as the groups range in a continuously graded series from one extreme to the other, there are some cases which seem to belong to more than one classification.

Jung[3] has suggested two categories on the basis of temperament, which he calls introvert and extrovert. The extrovert is more liable to disorders of the hysteric or dissociative type whereas the introvert is more predisposed to neurasthenia. Kretschmer[3,10] has proposed temperament types to which have been added a character fault or peculiarity which predisposes one group to manic-depressive disorder instead of hysteria and the other to schizophrenia rather than neurasthenia. Generally speaking, however, Kretschmer's cycloids belong to the extrovert group and the schizothymes to the introvert.

The matter of innate constitution seems to be the most influential factor in determining which tendency predominates, and, as we have mentioned, the elements are fairly well balanced in most individuals. Inasmuch as the constitutional factors are important in psychopathology, I believe we should mention a few of the characteristics of these types before we go any farther in the discussion of the disorders.

On the basis of temperament, the extrovert or cycloid is sociable and makes friends without a trace of self-consciousness, shyness, or awkwardness. He enjoys display and adornment, and responds to every form of sensuous beauty. He expresses his emotion freely and is readily distracted. His psychomotility is adequate, and there is a ready passing over of the affective urge into motor outlet with little modification by cerebral processes. The extrovert is the man of action. The introvert or schizothyme, on the other hand, is the thinker, and due to his lack of distractability he can see clearly many problems that never occur to the extrovert. He finds social contacts more or less painful and does not get on in a crowd. There is a pane of glass between the oversensitive, cold introvert and the outside world. The psychomotility is inhibited, and motor activity is often forestalled as a result of indecision.

In addition to these differences Kretschmer has found a close correlation between the characterological qualities and temperament, and certain physical peculiarities. He distinguishes people first, in accordance with their physique, and secondly, with their affectivity, and it is remarkable how closely the two are related in many cases. Kretschmer believes the connections between physique and temperament depend upon endocrinal and autonomic nervous correlations. Manic-depressive psychosis corresponds in psychopathology to the cyclothymic temperament in normal psychology and to the pyknosomatic physique (round, compact, full-bodied type with soft thin hair on head and thick body hair, barrel-shaped torso and soft, broad-rounded face). Schizophrenic psychoses are seen as a psychopathological caricature of normal schizothymic temperaments in a diversity of physical types, the most common of which are the leptosomatic and athletico-somatic forms. The athletico-somatics are thin, long-limbed, with narrow pelvis, massive skeleton, powerful neck and long egg-shaped face. The lepto-somatics are characterized by cylindrical, elongated, narrow torso, delicate skeletal and muscular systems, angular profile and short egg-shaped face.

(To Be Continued)

REFERENCES

1. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear, and Rage. Ed. 2. D. Appleton-Century Co., New York, 1929.
2. McDougall, William: Introduction to Social Psychology. Methuen and Co., London, 1908.
3. McDougall, William: Outline of Psychology. Charles Scribner and Sons, New York, 1923, Chapt. 17.
4. McDougall, William: Outline of Abnormal Psychology. Charles Scribner and Sons, New York, 1926, Chapt. 33.

5. Prince, M.: The Unconscious. The Macmillan Co., New York, 1924.
6. Mitchell: Referred to by McDougall, William: Outline of Abnormal Psychology. Charles Scribner and Sons, New York, 1923, p. 543.
7. Janet, P.: Principles of Psychotherapy. Trans. by H. M. and E. R. Guthrie. The Macmillan Co., New York, 1924.
8. Jung, C. G.: Psychological Types, Harcourt, Brace and Co., Inc., New York, 1923.
9. Kretschmer, Ernst: Physique and Character. Harcourt, Brace and Co., Inc., New York, 1926.
10. Kretschmer, Ernst: Textbook of Medical Psychology, Trans. by Strauss. Oxford University Press, Humphrey Milford, London, 1934.

Current Osteopathic Literature

Abstracted by R. E. Duffell, D.O.

CLINICAL OSTEOPATHY
LOS ANGELES
34: No. 8 (August), 1938

Corrective Manipulation Under Anesthesia. Wade H. Morris, D.O., Los Angeles.—p. 5.
Preoperative Care of the Surgical Patient. Gerald Houts, D.O., Los Angeles.—p. 10.
An Unusual Obstetrical Case. Glen D. Cayler, D.O., Los Angeles.—p. 20.
Hysterectomy—Its Uses and Abuses. Ernest G. Bashor, D.O., Los Angeles.—p. 27.
Prostatism—The Conservative Surgical Approach. Forest J. Grunigen, D.O., Los Angeles.—p. 34.
Editorial: What Does D.O. Mean to You? Edward B. Houghtaling, D.O., San Diego, Calif.—p. 44.
Legal Hazards of the Surgeon. Mr. Raymond Nettleship, Los Angeles.—p. 46.
Osteopathy versus Drugs. Joseph Marple, D.O., Glendale, Calif. —p. 49.

34: No. 9 (September), 1938

The Acute Lower Abdomen in the Female. Harriet L. Connor, D.O., Los Angeles.—p. 5.
Carcinoma of the Cervix. C. L. Nye, D.O., Los Angeles. —p. 16.
Maternal Mortality. W. Howard Coke, D.O., Pasadena, Calif. —p. 24.
*The Second Stage of Labor. Edward W. Milum, D. O., Pasadena, Calif.—p. 30.
Case Histories from College Research Clinic. Compiled by Violet P. Martin, D.O., and Madge Spencer, D.O., Los Angeles. —p. 34.
Bee Venom—A Successful Treatment for Arthritic and Rheumatic Conditions. Raymond L. Carey, D.O., Los Angeles.—p. 39.
Editorials: Hiding Our Lamp. E. B. Houghtaling, D.O., San Diego, Calif.—p. 43. We Are Still for Medical Freedom.—p. 44. Hang Together or Hang Separately. Mr. Raymond Nettleship, Los Angeles.—p. 45.

***The Second Stage of Labor.**—Milum says that the largest percentage of mismanaged obstetrical cases are in primiparas. In these cases the average length of the first stage is eight to twelve hours. As the patient enters the second stage, she is brought into the delivery room and the physician scrubs and gowns himself for any emergency that may arise. The author says that a prolonged second stage causes fatigue and apprehension on the part of the patient. He is against giving sedation to alleviate these symptoms. He feels that it only adds to the already existing mental imbalance and confuses the patient. Instead, if the patient has worked well during the first hour of the second stage and very little progress has been made, Milum believes that operative interference is indicated. He says: "Perhaps the membranes are still intact, and now having served their chief purpose in labor, they may tend to retard progress of the fetus. The pains may not be severe enough to force the fetal head to compress the amniotic fluid against the membranes to cause their rupture; or a thick anterior cervical lip may be present."

Early assistance on the part of the obstetrician tends to prevent exhaustion of the patient and lessens the danger of infection. This assistance may take the form of pushing a thick anterior cervical lip over the fetal occiput during an uterine contraction, of performing an oblique lateral episiotomy to prevent separation of levator muscles and to allow room for the fetus possibly to deliver spontaneously, or it may take the form in addition to applying force to deliver the head under the symphysis.

In closing, Milum quotes the "1937 Yearbook of Obstetrics and Gynecology," wherein DeLee says: "There are real scientific grounds on which to base prophylactic episiotomy and forceps, namely, the prevention of damage to the pelvic floor and the bladder supports, and to save the baby's brain from the hazards of a prolonged perineal delivery."

THE COLLEGE JOURNAL
KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY
KANSAS CITY, MO.
22:129-160 (October), 1938

Lakeside Hospital Reorganized. A. B. Crites, D.O., Kansas City, Mo.—p. 132.
By-Laws, Kansas City College of Osteopathy and Surgery.— p. 133.
Orbital Extension of Ethmoiditis. A. B. Crites, D.O., and H. N. Norris, D.O., Kansas City, Mo.—p. 137.
The Pathology of Laziness. M. J. Hoerman, D.O., Milford, Kans.—p. 139.
*The Role of the Osteopathic Lesion in Dermatoses. Annie G. Hedges, D.O., Kansas City, Mo.—p. 140.
Gangrenous Cholecystitis and Gall Stones in the Aged with Subphrenic Abscess Sequela. George J. Conley, D.O., Kansas City, Mo.—p. 142.
The Evolutionary Origin of the Osteopathic Concept. Byron Laycock, D.O., Kansas City, Mo.—p. 146.
A Comment on "The Lengthening Shadow of Dr. Andrew Taylor Still." George J. Conley, D.O., Kansas City, Mo.—p. 149.
Lactation and Care of Breasts. Margaret Jones, D.O., Kansas City, Mo.—p. 151.
Radiation Proctitis. Mabel Andersen, D.O., Kansas City, Mo. —p. 153.
What of Osteopathy? A. A. Kaiser, D.O., Kansas City, Mo.— p. 155.

***The Role of the Osteopathic Lesion in Dermatoses.** —Hedges says that a spinal articular lesion causes changes in the skin as well as other tissues in the immediate region of the disturbed articulation. These changes in the skin, however, are not always recognized as dermatoses. The skin may be deeply pigmented, or changes may occur in the appearance of the pilosebaceous follicles, or acne-like eruptions may occur with or without itching or burning.

Any chronic dermatosis which recurs in the same location usually is associated with a spinal lesion though the eruption may not always take the herpetic form. It may be papular, vesicular, urticarial, eczematous or of other types. Sometimes it may have superimposed upon it some other skin disease. Fungal infections may develop readily on a skin area lowered in resistance by spinal lesions.

The most characteristic skin disturbance as a result of an articular lesion is herpes. The writer describes a case of herpes zoster encountered in the Kansas City College clinic. The patient used a "plaster" for severe recurrent pain in the cardiac region. On examination of the patient, both spinal and rib lesions were found, but no heart condition. In this instance, the "plaster" might be named as the exciting cause of the herpes zoster. Careful manipulative treatment to the lesioned spine and rib coupled with heavy administration of vitamin C, regulation of diet, increase in elimination, and the application locally of a soothing lotion resulted in a satisfactory recovery.

JOURNAL OF OSTEOPATHY
KIRKSVILLE, MO.
45: No. 11 (November), 1938

Osteopathy and the Vocational Guidance Counsellor. H. G. Swanson, M.A., D.O., Kirksville, Mo.—p. 10.
Editorials: The Effect of New Educational Standards Upon Enrollment in Our Colleges. The Cleveland Convention of Osteopathic Surgeons. The Missouri State Convention. George M. Laughlin, D.O., Kirksville, Mo.—p. 14.
Perinephritic Abscess. Earl Laughlin, Jr., D.O., Kirksville, Mo.—p. 16.
A Lesion Effect. Wallace M. Pearson, A.B., B.S., D.O., Kirksville, Mo.—p. 19.
Strictly Manipulative. A Case of "Cyclic Vomiting" Due to a Focus of Irritation Caused by an Osteopathic Lesion. J. S. Denslow, D.O., Kirksville, Mo.—p. 22.
Case Report. Nephrectomy. Earl Laughlin, Jr., D.O., Kirksville, Mo.—p. 26.

Book Notices

(See ad page 21)

State Boards

District of Columbia

The examinations before the Board of Examiners in the Basic Sciences will be held beginning December 27 and will continue for two days. Only applicants who pass the examinations in the Basic Sciences will be admitted to the examinations in Medicine and Osteopathy.

Examinations before the Board of Examiners in Medicine and Osteopathy will be held beginning January 9, 1939.

All applications must be in the hands of the Secretary-Treasurer of the Commission on Licensure not later than December 15. Address George C. Ruhland, M.D., Secretary-Treasurer, Commission on Licensure, Room 203, District Building, Washington, D.C.

Florida

The next examinations will take place on February 23, 24 and 25, 1939, at Miami. All applications should be sent to A. G. Chappell, Secretary, 461 St. James Building, Jacksonville.

The following officers were elected on November 5: President, Norval E. Brown, Tampa, reelected; vice president, E. W. Flynn, Tallahassee; secretary-treasurer, Dr. Chappell, reelected.

Other members on the board are A. C. Lovejoy, Winter Haven, and C. S. Ball, Eustis, whose terms on the board will expire in 1939 and 1940 respectively.

Iowa

The new examinations of the Iowa State Board of Osteopathic Examiners will be held at the Des Moines Still College of Osteopathy, January 23, 24 and 25, 1939. For applications and other information address D. E. Hannan, Secretary, 202 Bruce-McLaughlin Bldg., Perry.

The Iowa Board of Examiners in the Basic Sciences will conduct a written examination at the State Capitol, Des Moines, on January 10, 1939, at 9:00 a.m. Address W. L. Strunk, D.Sc., Secretary, Decorah.

Louisiana

A business meeting was held on October 30 at Baton Rouge.

Missouri

The next examinations will be held at the Kirksville College of Osteopathy and Surgery and the Kansas City College of Osteopathy and Surgery, January 18, 19 and 20, 1939. Applications must be in the hands of the Secretary, Leon B. Lake, 314 Central Trust Bldg., Jefferson City, at least fifteen days before date of examination. For application blanks, write the secretary.

Vermont

The next examinations will be held on January 26 and 27, 1939, at Montpelier. Application blanks and other information may be obtained from the Secretary, R. L. Martin, 24 Elm St., Montpelier.

West Virginia

The next meeting of the state board will be held at Huntington, February 13 and 14, 1939.

Robert B. Thomas, Huntington, was recently reappointed to the board for a three year term, ending, June 30, 1941.

Conventions and Meetings

Announcements

American Osteopathic Association, Forty-Third Annual Convention, Dallas, June 26-30, 1939. Program chairman, Collin Brooke, St. Louis, Mo.

American Association of Osteopathic Examining Boards, Dallas, June, 1939.
American College of Osteopathic Obstreticians, Dallas, June, 1939.
American College of Osteopathic Surgeons, Dallas, June, 1939.
American Osteopathic Golf Association, Dallas, June, 1939.
American Osteopathic Society of Ophthalmology and Otolaryngology, Dallas, June, 1939.
American Osteopathic Society of Proctology, Dallas, June, 1939. Program chairman, Matt Henderson, Atlanta, Ga.
Associated Hospitals of Osteopathy, Dallas, June, 1939.
Associated Colleges of Osteopathy, Dallas, June, 1939.
California state convention, Fairmont Hotel, San Francisco, March 23-25, 1939. Program chairman, William T. Barrows, Oakland.
Eastern Osteopathic Association, Hotel Pennsylvania, New York City, March 25-26, 1939. Program chairman, C. D. Losee, Westfield, N. J.
Georgia state convention, May 5-6, 1939. Program chairman, D. C. Forehand, Albany.
Illinois state convention, Danville, 1939.
International Society of Osteopathic Ophthalmology and Otolaryngology, Dallas, June, 1939.
Iowa state convention, Hotel Savery, Des Moines, May, 1939. Program chairman, Rolla Hook, Logan.
Kansas state convention, Hotel Allis, Wichita, October, 1939. Program chairman, James B. Donley, Kingman.
Kentucky state convention, Louisville, 1939.
Legislative Council, Dallas, June, 1939.
Middle Atlantic States Osteopathic Association, Hotel Roanoke, Roanoke, Va., 1939.
Minnesota state convention, St. Paul, May 5-6, 1939. Program chairman, E. S. Powell, St. Paul.
Missouri state convention, Excelsior Springs, October 30, 31 and November 1. Program chairman, H. G. Swanson, Kirksville.
National Board of Examiners for Osteopathic Physicians and Surgeons, Dallas, June, 1939.
Nebraska state convention, Hastings, 1939.
New Hampshire state convention, Manchester, May, 1939. Program chairmen, Ralph G. Beverly, Keene, and C. S. Garran, Rochester.
New Mexico state convention, Roswell, 1939.
North Carolina state convention, Raleigh, May 27, 1939. Program chairman, A. R. Tucker, Raleigh.
Ohio state convention, Columbus, May 14-16, 1939. Program chairman, R. S. Licklider, Columbus.
Oregon state convention, Portland, June, 1939.
Osteopathic Women's National Association, Dallas, June, 1939.
Society of Divisional Secretaries, Dallas, June, 1939.
Tennessee state convention, Memphis, 1939. Program chairman, Walter Baker, Memphis.
Vermont state convention, Burlington, 1939.
Virginia state convention, Richmond, April, 1939. Program chairman, C. C. Akers, Lynchburg.
West Virginia state convention, Chancellor Hotel, Parkersburg, June 5-6, 1939. Program chairman, T. H. Lacey, Parkersburg.
Wyoming state convention, Riverton, June 4, 5, 1939. Program chairman, M. O. Furest, Riverton.

OFFICIAL AND AFFILIATED ORGANIZATIONS

ARIZONA

State Society

A semiannual meeting was held on October 9 at Casa Grande.

CALIFORNIA

Citrus Belt Branch

On October 13, Ralph Copeland, Los Angeles, spoke on "Tuberculosis." K. Grosvenor Bailey and Mr. Thomas C. Schumacher, both of Los Angeles, spoke on activities of the California Osteopathic Association.

The November meeting was scheduled to be held on the 10th at Riverside.

East Bay Osteopathic Luncheon Club

Meetings were held on October 25, November 1, 8, 15, and 22.

Fresno County Osteopathic Association

On October 3, Lawrence B. O'Meara, Los Angeles, was the guest speaker.

Glendale Branch

On October 12, Chester Parish, Glendale, spoke on "Elastic Bandage Technic."

On November 9, Charles Spencer, Los Angeles, spoke on "Osteopathy and Treatment of Athletic Injuries."

Long Beach Branch

On November 16, Floyd P. St. Clair, Los Angeles, was scheduled to speak on "The Scope of Osteopathic Therapy."

Los Angeles Branch

On October 10, Dain L. Tasker, Los Angeles, spoke on "Visual and X-Ray Findings in Pneumonia," Edward Randel, Los Angeles, on "Laboratory Findings in Pneumonia," and H. B. K. Willis, Los Angeles, on "Case History and Treatment of Pneumonia."

On November 15, Charles Spencer, and Floyd St. Clair, both of Los Angeles, spoke on "The Sacroiliac Joint," and E. Allen Peterson, "Across the Pacific in a Junk."

West Los Angeles Branch

October 17, Ernest G. Bashor, Los Angeles, talked on "Analgesia in Obstetrics."

On November 21, C. L. Nye, Los Angeles, spoke on "Coronary Thrombosis and Its Differential Diagnosis."

Orange County Branch

At Fullerton, October 13, Grace Bell, Los Angeles, spoke on "Vitamins and Their Relation to Treatment of Disease."

Pasadena Branch

On October 25, Charles Spencer, Los Angeles, spoke on "Osteopathy and Treatment of Athletic Injuries."

On November 17, J. Willoughby Howe, Los Angeles, spoke on "Differential Diagnosis of Acute Abdominal Conditions."

San Diego Branch

On November 4, Mr. Thomas C. Schumacher, Executive Secretary of the California Osteopathic Association, talked "The Advances of Socialized Medicine and Health Insurance," Charles W. Parish, Glendale, demonstrated "Elastic Bandage Technic." Motion picture films were shown.

San Diego Osteopathic Surgical Society

On October 26 the hospital committee made its report.

San Joaquin Valley Branch

On October 5, at Bakersfield, L. B. O'Meara, Los Angeles, spoke on "New Methods in Diagnosis and Treatment Used in the Hospital."

On November 6, at Bakersfield, Wendell G. Hendricks, Arvin, and Mr. Thomas C. Schumacher, Los Angeles, Executive Secretary of the California Osteopathic Association, were the guest speakers.

COLORADO

State Association

At Colorado Springs, October 22, P. E. Townsley, Colorado Springs, gave a paper on "Advantages of Autopsies," S. R. Hicks, Denver, on "Latest Work in Treatment of Deafness," and Paul Isaacson, Denver, on "Trichomonas Infestation."

Northern Colorado Osteopathic Association

At Boulder, October 16, H. I. Magoun and C. Robert Starks, both of Denver, were the speakers.

The following are the present officers: President, D. C. Giehm, Boulder; vice president, Cecil Thorp, Longmont; secretary, Robert Hays, Fort Collins.

DELAWARE

Osteopathic Society

A meeting was held on October 27.

GEORGIA

North Georgia Osteopathic Association

At Athens, October 16, Ruth Glass, Atlanta, spoke on "The High Spots of the 1938 A.O.A. Convention," Walter Jones, Rome, talked on "Posture and the Value of Clinical Observations," and Hoyt B. Trimble, Atlanta, led a discussion on legislation.

The next meeting is scheduled to be held in January at Atlanta.

IDAHO

State Association

The midyear meeting was held on November 12 and 13 at Twin Falls and the following program was presented: "Sinus Infections," Andrew McCauley, Idaho Falls; "Latest Methods of X-Ray Diagnosis and Treatment," W. S. Warner, Idaho Falls; "Practical Treatment of Nose and Throat Infection," C. L. Heuck, Nampa; "Fetal Presentations," C. R. Whittenberger, Caldwell; round table discussion of osteopathic technic.

Boise Valley Osteopathic Society

At Boise, October 20, F. H. Thurston, Boise, discussed, "Vitamins, Their Source and Efficiency," and E. E. Hiatt, Weiser, spoke on "Progress of Osteopathy."

ILLINOIS

Chicago Osteopathic Association

On November 3, E. W. Riechert, Chicago, was the principal speaker.

Chicago—North Shore Osteopathic Society

On October 31, Eugene Still, Chicago, spoke on "New Developments in Vitamin Therapy."

On November 18, B. E. Walstrom, Chicago, spoke on "Sacroiliac and Other Special Technic."

Chicago—South Side Osteopathic Physicians' Society

The following are the present officers: President, Charles E. Gaddie; secretary-treasurer, Ruth Bowman, both of Chicago.

A meeting was held on October 20.

On October 27, W. J. Loos, Chicago, spoke on "New Developments in Laboratory Work."

On November 3 a round table discussion was conducted.

On November 10 "Industrial First Aid and Bandaging" was discussed by Dr. Gaddie.

On November 17 motion pictures were shown.

Chicago—West Suburban Osteopathic Society

At Oak Park, November 19, C. G. Beckwith, Chicago, spoke on "X-Ray Postural Studies."

Third District Illinois Osteopathic Association

On October 20 at Aledo, H. W. Fitch, Bushnell, was the principal speaker.

Sixth District Illinois Osteopathic Association

(See Northeast Missouri Osteopathic Association)

Eighth District Illinois Osteopathic Association

On October 9 at Edwardsville a semiannual meeting was held. The next meeting is scheduled to be held at Mt. Vernon, April 9.

INDIANA

State Association

On October 20, the following officers were elected: President, T. K. Arbuthnot, Richmond; vice president, E. B. Cary, Brazil; secretary, Fred L. Swope, Richmond, reelected; treasurer, Kate Williams, Indianapolis, reelected; editor, Fred L. Swope, Richmond.

In the program published in THE JOURNAL for November the name of Douglas Appleyard was given erroneously as a speaker. Esmond C. Appleyard, Chicago, spoke on "The Failing Heart of Middle Age." Robert Clarke, Chicago, also spoke on that subject.

Northeastern Indiana Osteopathic Association

On November 9, J. C. Stone, Kokomo, spoke on "Posture in Relation to Health."

Northern Indiana Osteopathic Association

A meeting was held at South Bend, November 16.

IOWA

Polk County Osteopathic Association

On October 14, Mr. Dwight James, attorney, spoke on "Legal Problems in Professional Life."

Powshiek County Osteopathic Society

At Grinnell, November 10, F. A. Gordon, Marshalltown, was the principal speaker.

First District Iowa Osteopathic Association

The following officers were elected on October 13: President, Theodore Tueckes, Davenport; vice president, C. K. Risser, Maquoketa; secretary-treasurer, G. A. Whetstine, Wilton Junction, reelected.

Third District Iowa Osteopathic Association

The following officers were elected in October: President, Gerald W. Loerke, Ottumwa; secretary-treasurer, J. W. Rinabarger, Keosauqua, reelected.

Sixth District Iowa Osteopathic Association

The following officers were elected in October: President, F. A. Martin, Murray; vice president, A. D. Craft, Osceola; secretary-treasurer, Willis Crews, Redfield. The following committee chairmen have been appointed: Convention program, Fred Campbell, Des Moines; convention arrangements, Dr. Craft; legislation, D. E. Hannan, Perry.

KANSAS

State Association

The thirty-ninth annual convention was held on October 12-14 at Iola. The program was reported in THE JOURNAL for October.

The following officers were elected: President, Kirkland A. Bush, Harper; vice president, Dale McCoy, Burlington; executive secretary-treasurer, Raymond L. DeLong, Wichita, reelected; editor and statistician, Dr. DeLong; trustee, Fred E. Hastings, Pratt.

The following committee chairmen have been appointed: Department of professional affairs, Karl M. Pearson, Kansas City; membership, Lawton M. Hanna, Clay Center; professional education and development, Theodore Corcanges, Pomona; vocational guidance, Kenneth J. Davis, Kansas City; state convention general chairman, Dr. DeLong; state convention local chairman, Q. W. Wilson, Wichita; state convention program committee, James B. Donley, Kingman; hospitals, Thomas K. Orton, Hoisington; censorship, Sloan H. Nolen, Wichita; department of public affairs, R. Raymond Wallace, Caldwell; industrial and institutional service, C. B. Myers, Madison; clinics, Laurance B. Foster, Jetmore; public health and education, Carlton M. Noll, Scott City; maternal-child health and welfare, Victor R. Cade, Larned; osteopathic exhibits at fairs, etc., Paul L. Leeper, Hutchinson; legislation, Dr. Wilson; public and professional welfare, B. L. Gleason, Larned; veterans' affairs, Ivan F. Hooper, Russell; constitution and by-laws, Irwin E. Nickell, Smith Center; social security, Dr. DeLong; nominating, J. B. Donley, Kingman; 1940 convention city, Dr. Bush.

Arkansas Valley Society of Osteopathic Physicians and Surgeons

At Kinsley, October 27, C. S. McMurry, Utica, spoke on "Comprehensive Treatment of Burns," Earl C. Kinzie, Ness City, on "Methods That I Use in Practice Building," and B. L. Gleason, Larned, "Publicity."

Central Kansas Association of Osteopathic Physicians and Surgeons

A joint meeting was held with the North Central Kansas Society of Osteopathic Physicians and Surgeons at Beloit, October 27. William S. Childs, Salina, was the principal speaker.

Eastern Kansas Osteopathic Association

On November 10 at Garnett, Richard Brenen, Kansas City, spoke on "Urological Diagnosis," and W. A. Warren, Kansas City, on "Hypertrophy of the Prostate."

North Central Kansas Society of Osteopathic Physicians and Surgeons

(See Central Kansas Association of Osteopathic Physicians and Surgeons)

The officers were reported in THE JOURNAL for November. The following committee chairmen have been appointed: Membership, C. F. Bingesser, Waconda Springs; student recruiting, H. E. Tunnell, Clyde; public health and education, C. W. McClaskey, Cuba; clinics and legislation, I. E. Nickell, Smith Center.

South Central Kansas Society of Osteopathic Physicians and Surgeons

A meeting was held at Madison, October 27.

Phillips County Osteopathic Society

An organization meeting was held in October, at which time the following officers were elected: President, F. Lee Doctor, Agra; secretary, A. B. Limes, Logan.

KENTUCKY

State Association

The thirty-third annual convention was held at Lexington, October 13 and 14. The program was published in THE JOURNAL for October.

The following officers have been elected: President, Martha Garnett, Louisville; first vice president, Robert Whipple, Owensboro; second vice president, Edmund H. Bouton, Frankfort; secretary-treasurer, N. H. Wright, Louisville, reelected. The Board of Trustees is made up of Nora Prather, C. W. Barnes, Stanley G. Bandeen and E. W. Patterson, all of Louisville, and R. Evelyn Alvord, Lexington.

LOUISIANA

State Association

The annual convention was held at Baton Rouge, October 29 and 30. The program was published in THE JOURNAL for October.

The following officers were elected: President, V. L. Wharton, Lake Charles, reelected; vice president, A. E. Stanton, Crowley; secretary, Henry Tete, New Orleans, reelected; treasurer, James A. Keller, Jennings.

MAINE

Central Maine Osteopathic Society

At Waterville, November 6, A. E. Chittenden, Auburn, spoke on "Legislation."

Western Maine Osteopathic Association

At Turner, November 21, A. E. Chittenden, Auburn, spoke on "Current Events in the Profession."

MARYLAND

State Association

The officers were reported in THE JOURNAL for October. The following committee chairmen have been appointed: Professional education, E. F. Withers, Denton; public health and education, Grace R. McMains, Baltimore; legislation, Henry McMains, Baltimore.

MASSACHUSETTS

Connecticut Valley Osteopathic Association

At Springfield, October 18, Mr. George K. Clough discussed "Laboratory Diagnosis."

Essex County Osteopathic Society

On October 24, at Salem, Mark Shrum, Lynn, spoke on "Functions of the Board of Registration in Medicine."

Middlesex South Osteopathic Society

At Cambridge, November 3, Samuel A. Levine, Boston, spoke on "Heart Disease."

The December meeting is scheduled to be held on the 1st at Cambridge.

Mystic Valley Osteopathic Society of Massachusetts

A meeting was held on October 20.

On November 17, Dale S. Atwood, St. Johnsbury, Vt., spoke on "Osteopathic Technic."

Worcester District Osteopathic Society

On November 2, N. A. Nelson, M.D., of the Massachusetts Department of Public Health, spoke on "Syphilis and Gonorrhea: Notions vs. Facts."

MICHIGAN

State Association

The fortieth annual convention was held on October 25 to 27 at Detroit. The program was published in THE JOURNAL for October.

The following officers were elected: President, R. T. Lustig, Grand Rapids; vice president, Joseph W. Norton, Farmington; secretary-treasurer, Philip E. Haviland, Detroit; statistician, L. C. Johnson, Pontiac; trustee, H. D. Hutt, Holly.

Kent County Society of Osteopathic Physicians and Surgeons

A dinner party was held in honor of R. T. Lustig, Grand Rapids, November 1.

Thumb Association of Physicians and Surgeons of Osteopathic Medicine

An organization meeting was held in September. D. D. Walker, Port Huron, was the guest speaker. The organization consisted of Sanilac and Huron Counties.

The following officers were elected: President, Douglas M. Baird, Deckerville; vice president, Dexter B. Rice, Minden City; secretary-treasurer, Robert H. McDowell, Harbor Beach.

At Port Huron, November 10, St. Clair County came into the association. A. C. Johnson, Detroit, spoke on "The Acute Surgical Abdomen."

The December meeting is scheduled to be held at Ubly.

MINNESOTA

Minneapolis Osteopathic Society

On November 2, Mr. Einar Juel discussed "Mental Attitudes," and Clifford S. Pollock, Minneapolis, reviewed "Recent Medical Literature on Vitamins, Cervical Ribs and Typing and Serum in Pneumonias."

MISSOURI

State Association

The thirty-eighth annual convention was held at Hannibal, October 20 to 22. The program was given in THE JOURNAL for October.

The following officers were elected: President, Otis L. Dickey, Joplin; first vice president, F. W. Zuspan, Flat River; second vice president, M. Margaret Fuller, Cape Girardeau; secretary-treasurer, H. D. McClure, Kirksville, reelected; editor, Dr. McClure.

The following committee chairmen have been appointed: Legal and legislative advisor, Collin Brooke, St. Louis; group hospitalization, health insurance, farm security administration and farmers cooperatives, Dr. McClure; educational radio broadcasts, J. Lincoln Hirst, St. Louis; convention program, H. G. Swanson, Kirksville.

Buchanan County Osteopathic Association

At St. Joseph, November 3, a representative of the firm of Mumford and Hanna, spoke on "Hospital and Medical Service Insurance."

Northeast Missouri Osteopathic Association

At Quincy, Ill., November 10 a joint meeting was held with the Sixth District Illinois Osteopathic Association, J. S. Denslow, Kirksville spoke on "Gastrointestinal Dysfunction and Its Prevention."

The December meeting is scheduled to be held at Kirksville.

Ozark Osteopathic Association

At Republic, November 7, J. G. Bennett, Jerico Springs, spoke on "A Young Doctor's Experience with a County Practice," and Wilma Westfall, Springfield, read a paper prepared by William L. Wetzel, Springfield, on "Parenteral Solutions."

The next meeting is scheduled to be held in January at Springfield.

The officers were reported in THE JOURNAL for November. The following committee chairmen have been appointed: Membership, Dr. Westfall, Springfield; professional education, George L. Noland, Springfield; hospitals, W. M. Wetzel, Springfield; censorship, J. H. LaPere, Stockton; student recruiting and legislation, Lou Tway Noland, Springfield; public health and education, J. G. Bennett, Jerico Springs; industrial and institutional service, R. C. Mitchell, Republic; clinics, T. M. King, Springfield; publicity, Louise Remmert, Springfield; statistics, Bert L. Dunnington, Springfield; professional development, M. C. Burtt, Springfield.

St. Louis Osteopathic Association

On November 15, George Shoemaker, St. Louis, spoke on "Irrigation of Lungs," and H. Willard Brown, Springfield, Ill., on "Public and Professional Welfare Work."

Southwest Missouri Osteopathic Association

The officers were reported in THE JOURNAL for November. The following committee chairmen have been appointed: Public health and education, Mildred R. Wilkinson and publicity, C. G. Cohagan, both of Joplin.

NEW JERSEY

Atlantic and Cape May County Osteopathic Society

The October meeting was held at Atlantic City.

NEW YORK

State Society

The fortieth annual convention was held at Binghamton, October 8 and 9. The program was published in THE JOURNAL for November. The following officers were reelected: President, A. W. Bailey, Schenectady; vice president, Helen M. Dunning, New York City; secretary, Melvin B. Hasbrouck, Albany; treasurer, Geraldine Wilmot, New York City.

The following chairmen have been appointed: Department of public affairs, William O. Kingsbury, New York City; legislation, John L. Brookman, Albany; legislative advisory, H. Van Arsdale Hillman, New York City; compensation law board, C. M. Bancroft, Canandaigua; public relations, J. Marshall Hoag, New York City; state and social medicine, Edward W. Cleveland, Binghamton; department of professional affairs, R. McFarlane Tilley, New York City; education and professional development, Thomas R. Thorburn, New York City; student recruiting, Donald B. Thorburn, New York City; clinics and hospitals, John R. Miller, Rome; program circuit speakers, T. T. Bassett, Syracuse; membership, Melvin B. Hasbrouck, Albany; ethics, vigilance and censorship, M. Lawrence Elwell, Rochester; finance and budget, William O. Kingsbury, New York City; reorganization, R. McFarlane Tilley, New York City; insurance, H. B. Herdeg, Buffalo; resolutions, George W. Riley, New York City.

Central New York Osteopathic Society

On October 19, the following officers were elected: President, Judson W. Johnston; vice president, Allen S. Prescott; secretary, Francis J. Beall, Jr., reelected, all of Syracuse; treasurer, Stewart P. Smith, Auburn; Board, President, Patrick H. O'Hara, John H. Finley, Fred I. Gruman, William E. Kaufmann, Tefft T. Bassett, all of Syracuse.

Committee chairmen have been appointed as follows: Publicity, Dr. Bassett; program and membership, Dr. Prescott; legislation, John R. Miller, Rome; auditor, Dr. O'Hara; syphilis lectures, Dr. Beall.

On November 9, Fred I. Gruman, Syracuse, spoke on "Uses of Sulfanilimide," Dr. Beall, on "Behind the Scenes With the Team Physician," and Dr. Bassett, on "Diagnosis and Treatment of Pernicious Anemia."

Hudson River North Osteopathic Society

At Newburgh, October 26, John Mearns, Greenwich, and M. A. Hasbrouck, Albany, were the speakers.

At Schenectady, November 5, E. M. Stanton, Schenectady, spoke on "The Various Aspects of Health Insurance."

Long Island Osteopathic Society

The following officers were elected on October 20; President G. W. Campbell, Lynbrook; vice president, Frederick E. Wicks, Huntington; secretary, George Maxwell, Bay Shore; treasurer, Warren J. E. Tucker, Port Washington; recording secretary, Elizabeth S. Carlin, Hempstead. The following committee chairmen have been appointed: Public health and education, Mildred D. Webb, Garden City; publicity, Charles K. Smith, Freeport; program, James W. Campbell, Rockville Centre; legislation, Dr. Wicks.

A meeting was held on November 2.

Osteopathic Society of the City of New York

On December 17, Eugene R. Kraus, New York City, presented "A Resume of the Importance of X-Ray Study of Disease of the Upper Extremity."

Rochester District Osteopathic Society

On October 20, Robert Cole, Geneva, summarized the activities of the House of Delegates to the New York State Society.

The following officers were elected: President, L. Reginald Campbell, Rochester; vice president, Dr. Cole; secretary-treasurer, Hanford Petri, Rochester; directors, Hewett W. Strever, Clarence J. W. Beal and George T. Smith, all of Rochester.

The following committee chairmen have been appointed: Public health, Dr. Petri; postgraduate lectures, Francis Cady, Rochester; professional forum, Merritt C. Vaughan, Rochester; editorial contact, Dr. Campbell; radio, Dr. Strever; legislation, M. Lawrence Elwell, Rochester; ethics, Florence D. Kemmler, Rochester.

Westchester County Osteopathic Society

At Yonkers, November 2, C. Haddon Soden, Philadelphia, discussed a case of scoliosis.

Western New York Osteopathic Association

At Buffalo, October 14, James Cole, M.D., Buffalo, spoke on "Low-Back Problems," illustrating his talk with lantern slides.

At Buffalo, November 12, Winfield Butsch, M.D., spoke on "Pathways of Referred Pain From Abdominal Disease."

NORTH DAKOTA

State Association

The following officers were elected on October 23: President, B. B. Bahme, Dickinson, reelected; vice president, E. O. Smith, Cavalier; secretary-treasurer, Georgianna Pfeiffer, Fargo, reelected.

OHIO

State Society

J. O. Watson, Columbus, resigned as legislative chairman. E. Q. Lamb, Columbus, has recently been appointed in his place.

Lyceum Circuit

Earl Laughlin, Jr., Kirksville, Mo., was the lyceum circuit speaker. He talked on "Fractures." The following was the schedule: November 7, first district, Toledo; November 8, second district, Cleveland; November 9, seventh district, Marietta November 10, fourth district, Columbus November 11, fifth district, Dayton.

Ashtabula Osteopathic Society of Physicians and Surgeons

On November 2, Dale Pearson, Erie, spoke on "Multiple Sclerosis."

Athens and Hocking Counties Society of Osteopathic Physicians and Surgeons

The officers were reported in THE JOURNAL for October. The following committee chairmen have been appointed: Professional education, C. F. Rauch, Logan; public health and education, H. E. Dobbs, Logan.

At Athens, October 20, H. R. Nye, Athens, spoke on "Anal Fissure and Its Surgical Treatment."

The November meeting was scheduled to be held on the 17th at Nelsonville.

Osteopathic Study Club of Dayton

On November 10, Robert Neth, Piqua, spoke on "Cardiac Renal Edema," and motion pictures were shown.

Dayton Osteopathic Club

Stephen Walker, Dayton, has recently been appointed secretary to replace Vernon E. Hoefer, who removed from the city.

Muskingum County Association of Osteopathic Physicians

A meeting was held at Zanesville in November. Roy Licklider, Zanesville, led a discussion on "State Legislation."

The December meeting is to be held at Zanesville.

Third (Akron) District Osteopathic Society

On November 2, J. Waltemeyer Keckler, Cleveland, spoke on "Celiac Disease—Diagnosis and Treatment."

Fifth (Dayton) District Osteopathic Society

On October 19, Chauncey Lawrance, Springfield, discussed and demonstrated "Technic of the Cervical Region," and Warren W. Custis, Dayton, read a paper on "Thoracic Region—Its Diagnosis and Treatment." A. L. McGowan, Dayton, gave a resume of "Technic and Pathology of the Sacroiliac Joint."

Sixth (Cincinnati) Society of Osteopathic Physicians and Surgeons

On November 10, C. A. Ross, Cincinnati, spoke on "Early Ohio Legislation and Osteopathic Medicine."

OKLAHOMA

Central Oklahoma Osteopathic Association

A meeting was held on October 1 at Holdenville.

The November meeting was scheduled to be held on the 5th at Stroud.

Kay County Osteopathic Association

The November meeting was held at Cherokee on the 3rd.

Muskogee County Osteopathic Society

Officers were reported in THE JOURNAL for July. Francis A. McCarthy, Porum, was elected vice president. Emily C. Brooks, Muskogee, was appointed censorship chairman.

South-Central District of Oklahoma Osteopathic Association

At El Reno, October 18, F. A. Englehart, Oklahoma City, spoke on "What Is New in Endocrinology," and W. E. Pool, Lindsay, discussed "Primary Short Lower Extremity."

The following officers were elected: President, Ivan L. Clark, Kingfisher; secretary, Dr. Pool.

OREGON

Willamette Valley Osteopathic Society

A reorganization meeting was held at Eugene, October 29. The following officers were elected: President, D. E. Reid, Lebanon; vice president, E. D. Rathbone, Eugene; secretary-treasurer, W. P. Goulding, Corvallis.

The December meeting is scheduled to be held on the 10th at Lebanon.

PENNSYLVANIA

Central District Osteopathic Society

At Harrisburg, October 23, the following officers were reelected: President, George Stineman, Harrisburg; vice president, J. Paul Spanogle, Chambersburg; secretary, H. M. Leonard, Harrisburg; treasurer, Phineas Dietz, Harrisburg.

George S. Rothmeyer, Philadelphia, spoke on "Athletic Injuries and Their Care."

Dauphin County Osteopathic Association

At Summerdale, October 10, the following officers were elected: President, J. Clarence Bachman; vice president, John McA. Ulrich; recording secretary, George Stineman; corresponding secretary, Stewart Harkness; treasurer, Phineas Dietz, all of Harrisburg.

Lehigh Valley Osteopathic Society

At Reading, October 13, H. Walter Evans, Philadelphia, spoke on "Suction Biopsy as an Aid in the Diagnosis of Uterine Pathology."

The December meeting is to be held at Bangor.

Northeastern Pennsylvania Osteopathic Association

At Scranton, November 5, A. G. Walmsley, Bethlehem, spoke on "The Osteopathic Handling of the Early Middle Ear Infection and the Prevention of Otitis Media in Acute Diseases."

The following officers were elected: President, Margaret Evans, Scranton; vice president, E. L. Lindsey, Scranton; secretary-treasurer, John Colvin, Kingston.

TEXAS

Austin Association of Osteopathic Physicians and Surgeons

The following officers were elected on October 20: President, Harold Broadbent; vice president, Joseph L. Love; secretary-treasurer, James A. Deveny, all of Austin.

The following committee chairmen have been appointed: Public relations, Dr. Love; clinics, A. L. Deveny; student recruiting, W. A. Lewis; program, John Donovan; ladies auxiliary, R. L. Peters, all of Austin; constitution and by-laws, C. J. Weiland, San Marcus.

Dallas County Osteopathic Association

On October 13, Chester L. Farquharson, Houston, spoke on "Deformities of the Spine," illustrating his talk with x-ray films, and Lester M. Farquharson, Houston, talked on "Angina Pectoris."

On November 10, the following program was presented: H. G. Grainger, Tyler, "Calcium Therapy as an Adjunct in Practice;" G. G. Porter, Tyler, "Diabetes;" Jason Grinnell, Palestine, "Gastric and Duodenal Ulcers;" H. R. Coats, Tyler, "Modern Trends Toward Osteopathy in Medical Ranks."

East Texas Association of Osteopathic Physicians and Surgeons

The November meeting was held at Nacogdoches on the 3rd.

North Texas District Association of Osteopathic Physicians and Surgeons

The November meeting was held at Denison on the 19th.

West Texas Osteopathic Association

At Marfa, November 22 and 23, a meeting was scheduled to be held. The following scientific program was to be presented: "Eye, Ear, Nose and Throat," R. H. Peterson, Wichita Falls; "Injection Treatment of Hernia," R. R. Norwood, Mineral Wells; "Allergies," Charles F. Kennedy, Fort Worth; "Surgery," Sam Sparks, Dallas; "Proctology," J. T. Elder, San Angelo. A deer hunt was to be held in connection with this meeting.

VERMONT

State Association

The officers were reported in THE JOURNAL for November. The following committee chairmen have been appointed: Professional education, Marian Norton, Windsor; professional development, J. H. Blackmere, Randolph; convention program, T. J. Dunleavy, Barre; hospitals and clinics, R. L. Martin, Montpelier; industrial and institutional service, G. D. Eddy, Burlington; public health and education, J. H. Spencer, St. Albans; legislation, H. A. Drew, Barre; publicity and public relations, Dale S. Atwood, St. Johnsbury; membership, K. R. Dunn, Brattleboro; student recruiting, K. P. Wheeler, Brattleboro; statistics, L. D. Martin, Barre; convention arrangements, C. H. Vaughan, Burlington; veterans, R. L. Martin, Montpelier; radio, J. M. MacDonald; social security, Dr. Drew.

WASHINGTON

State Association

The officers were reported in THE JOURNAL for August. The following committee chairmen have been appointed: Membership, K. D. Kohler, Spokane; professional education and development, W. A. Newland, Seattle; hospitals and clinics, C. H. Baker, Seattle; censorship, A. B. Ford, Seattle; student recruiting, H. L. Davis, Walla Walla; public health and education, J. F. Martin, Seattle; industrial and institutional service, Einer Peterson, Tacoma; statistics, L. H. Walker, Ellensburg; federal and state insurance, G. S. Fuller, Seattle; layman's auxiliary, Roberta Wimer-Ford, Seattle; legislation, M. R. Kint, Bremerton; finance, H. F. Morse, Wenatchee.

King County Osteopathic Association

On October 13, George S. Fuller, W. A. Newland, G. H. Parker and Ira M. Bundy, all of Seattle, were the speakers.

WEST VIRGINIA

Monongahela Valley Osteopathic Society

At Fairmont, October 13, Preston B. Gandy, Clarksburg, spoke on "Injectable Bee Venom in the Treatment of Chronic Arthitis."

The following officers were elected: President, A. H. Trefz, Weston; vice president, Benjamin Morris, West Union; secretary-treasurer, Dr. Gandy.

Ohio Valley Osteopathic Association

At East Liverpool, Ohio, October 27, John W. Hayes, East Liverpool, spoke on "Traumatic Strabismus and Diplopia." A general discussion followed.

The November meeting was scheduled to be held at Bellaire, Ohio.

Parkersburg District

At an organization meeting held on November 1, R. W. Eshenaur, Point Pleasant, spoke on "Meeting Emergencies in General Practice."

The following officers were elected: President, R. J. Morey, Parkersburg; vice president, R. H. Bennett, Arnoldsburg; secretary, W. R. McLaughlin, Parkersburg.

Southern West Virginia Osteopathic Society

At Hinton, November 6, demonstrations of osteopathic technic were given.

CANADA

The Maritime Osteopathic Association

This association was organized on June 20 at Moncton. It includes New Brunswick, Nova Scotia and Prince Edward Island. The following officers were elected: President, J. M. MacLeod, Moncton, vice president, A. J. O'Donnell, St. John; secretary-treasurer, A. H. Oliphant, Moncton.

Books Received

ADVENTURES IN RESPIRATION: MODES OF ASPHYXIATION AND METHODS OF RESUSCITATION. By Yandell Henderson. Cloth. Pp. 316, with illustrations. Price, $3.00. The Williams & Wilkins Co., Mt. Royal and Guilford Aves., Baltimore, Md., 1938.

DISEASES OF THE EAR, NOSE AND THROAT. By Francis L. Lederer, B.Sc., M.D., F.A.C.S. Cloth. Pp. 835, with 457 illustrations. Price, $10.00. F. A. Davis Co., 1914-16 Cherry St. Philadelphia, 1938.

ALLERGIC DISEASES: THEIR DIAGNOSIS AND TREATMENT. By Ray M. Balyeat, M.A., M.D., F.A.C.P. Fifth edition. Cloth. Pp. 547, with 145 illustrations. Price, $6.00. F. A. Davis Co., 1914-16 Cherry St., Philadelphia, 1938.

PEDIATRIC SYMPTOMATOLOGY AND DIFFERENTIAL DIAGNOSIS. By Sanford Blum, A.B., M.S., M.D. Cloth. Pp. 500, with 29 illustrations. Price, $5.00. F. A. Davis Co., 1914-16 Cherry St., Philadelphia, 1938.

THE CEREBROSPINAL FLUID. By H. Houston Merritt, M.D., and Frank Fremont-Smith, M.D. Cloth. Pp. 333, with 17 illustrations. Price, $5.00. W. B. Saunders Co., West Washington Square, Philadelphia, 1938.

YOUR LIFE IS IN THEIR HANDS. By Cash Asher. Cloth. Pp. 109. Price, $1.50. The Dunlaun Press, 810 Rhode Island Ave., N.E., Washington, D. C., 1938.

HEALTH, HYGIENE AND HOOEY. By W. W. Bauer, M.D. Cloth. Pp. 322. Price, $2.50. Bobbs-Merrill Company, 724 N. Meridian Street, Indianapolis, 1938.

A TEXTBOOK OF MEDICAL BACTERIOLOGY. By David L. Belding, M.D., and Alice T. Marston, Ph.D. Cloth. Pp. 592, with 43 illustrations. Price, $5.00. D. Appleton-Century Co., 35 West 32nd Street, New York City, 1938.

THE FUNDAMENTALS OF INTERNAL MEDICINE. By Wallace Mason Yater, A.B., M.D., M.S.(in Med.) Cloth. Pp. 1021, with 255 illustrations. Price, $9.00. D. Appleton-Century Co., 35 West 32nd Street, New York City, 1938.

THE RELATION BETWEEN INJURY AND DISEASE. By Jewett V. Reed, B.S., M.D., F.A.C.S., and Charles P. Emerson, A.B., M.D., D.Sc. Cloth. Pp. 577, with 21 illustrations. Price, $7.50. Bobbs-Merrill Company, 724 N. Merdian Street, Indianapolis, 1938.

DISEASES OF THE NOSE, THROAT AND EAR. By W. Wallace Morris, M.D. Cloth. Pp. 675, with 334 illustrations. Price, $5.50. W. B. Saunders Company, West Washington Square, Philadelphia, 1938.

SYNOPSIS OF CLINICAL LABORATORY METHODS. By W. E. Bray, B.A., M.D. Second Edition. Cloth. Pp. 408, with 68 illustrations. Price, $4.50. C. V. Mosby Co., 3525 Pine Blvd., St. Louis, 1938.

ARGYROL SOLUTION PROTECTION
• NOW IMPROVED •

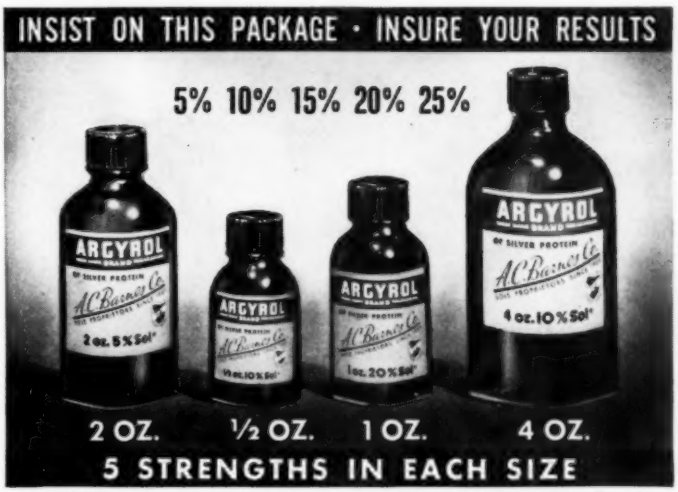
Your patients and your results will be benefited by this important change

MEDICAL literature has often stressed the necessity for fresh, protected ARGYROL solutions. But, in the past, dispensing bottles containing this important drug were opened and exposed to light, moisture and other contamination as many as one hundred times and more. Stock solutions were often held for long periods before use.

Now new control in the form of individual packaging in light-resisting glass affords proper protection for ARGYROL from the laboratory to the prescription department, in your office and in the medicine chest. Compounding is on order only; exposure is entirely eliminated.

Now physicians can be assured of this protection by writing or recommending ARGYROL ORIGINAL PACKAGE in any size or percentage as listed below. Your patient will derive the benefits of a freshly prepared solution of standard potency, properly protected against all possible exposure.

The superior clinical efficiency of ARGYROL solutions, proved by 37 years of investigation and continuous use by the medical profession, is due to the *never duplicated* sedative, detergent and inflammation-allaying action—resulting from proper coordination of fine colloidal dispersion, active Brownian movement, controlled pH and pAg, effective bacteriostatic action, demulcent and non-irritating properties. You can depend upon these concrete advantages when you specify ARGYROL ORIGINAL PACKAGE.



ARGYROL *is unique. It is equally mild and non-irritating in a 50% solution as in a 1% solution. Labels on the new original packages are removable on prescription, but the physician can identify the new control by the name A. C. Barnes impressed in the glass on the bottom of each bottle.*

A. C. BARNES COMPANY, INC. • NEW BRUNSWICK, N. J.

"Argyrol" is a registered trade mark, the property of A. C. Barnes Co., Inc.

Book Notices

CLINICS ON SECONDARY GASTRO-INTESTINAL DISORDERS; RECIPROCAL RELATIONSHIPS. By Julius Friedenwald, M.D.; Theodore H. Morrison, M. D., and Samuel Morrison, M.D. Cloth. Pp. 251. Price, $3.00. William Wood & Co., Mt. Royal and Guilford Aves., Baltimore, 1938.

This small book is said to be the only one in English which emphasizes secondary disorders and reciprocal relationships in this field. It stresses the fact that the digestive system often serves as a mirror, reflecting abnormalities in other organs such as the heart, lungs, liver, the genitourinary tract, or the endocrines, or as a "sounding board of disease" such as focal infection, syphilis or nervous affections, eye diseases, etc.

CIVILIZATION AND DISEASE. By C. P. Donnison, M.D. (Lond.), M.R.C.P. (Lond.). Cloth. Pp. 222. Price, $3.00. William Wood & Co., Mt. Royal and Guilford Aves., Baltimore, 1938.

The author practiced among the members of a primitive race in an isolated part of Africa for a number of years and then came back to practice in England. The contrast between the kinds of diseases in the one place and in the other set him to thinking and then to studying with the result that this book was written. He believes that such a study should be made not so much on the particular diseases plaguing civilization, but rather on what he calls "the biological change," which may be described as "civilization." He is not so dogmatic, in the case of many diseases, as to reach a conclusive opinion on the basis of the evidence at hand, but in a number of other such diseases he feels certain that a definite relationship has been shown between "civilization" and the conditions under consideration. Whether one agrees with him or not, the book is not large, the price is not high, and it contains much food for thought.

STEP BY STEP IN SEX EDUCATION. By Edith Hale Swift, A.B., M.D. Cloth. Pp. 207. Price $2. The Macmillan Company, 60 Fifth Avenue, New York, 1938.

The author takes up the questions which a boy and a girl might ask from the beginning of interest in sex to maturity. Father, Mother, Son, and Daughter enter into the discussions, and the questions are frankly, ingeniously, and yet easily answered. It is an unusually good presentation of the facts.

(Continued on page 22)

BOOK NOTICES

(Continued from page 21)

A B C OF THE VITAMINS: A SURVEY IN CHARTS. By Jennie Gregory, M.S. Foreword by Walter H. Eddy. Cloth. Pp. 93. Price, $3.00. The Williams and Wilkins Co., Mt. Royal and Guilford Avenues, Baltimore, 1938.

These large pages contain tables, charts, graphs, and pictures, visualizing clearly the important points in an up to date knowledge of the vitamins.

PHYSICAL THERAPY IN ARTHRITIS. By Frank Hammond Krusen, M.D. Cloth. Pp. 180, with 21 illustrations. Price, $2.25. Paul B. Hoeber, Inc., 76 Fifth Avenue, New York City, 1937.

This is a little book quoting directly from many authorities on the subject of arthritis, and applying the ordinary methods of physical therapy to home use. It is intended as a guide to the general practitioner, whose ordinary arthritic patients are unable to avail themselves of institutional treatment, or who may relapse on their return from an institution. The book is carefully prepared and well illustrated.

INJECTION TREATMENT OF VARICOSE VEINS AND HEMORRHOIDS. By H. O. McPheeters, M.D., F.A.C.S., and James Kerr Anderson, M.D., F.A.C.S. Cloth. Pp. 315, with 82 illustrations. Price, $4.50. F. A. Davis Co., 1914-16 Cherry St., Philadelphia, 1938.

This is essentially a revision of McPheeters' "Varicose Veins with Special Reference to the Injection Treatment," to which is added a section on the injection treatment of hemorrhoids. Each part of the book has its own bibliography and its own index. McPheeters' earlier book was one of the best on the subject which had appeared up to 1930. It is amplified in this edition. It takes into consideration anatomy and pathology; selection of patients; technique; solutions to be injected, etc.

A PRAIRIE DOCTOR OF THE EIGHTIES. By Francis A. Long, M.D. Cloth. Pp. 223, with illustrations. Price, $2.75. Huse Publishing Company, Norfolk, Nebr., 1937.

Another of the biographical and autobiographical medical books appearing in recent months is this small volume which, in telling the life of one man, sketches practically the entire history of medical practice in Nebraska, even including that of the Indian medicine man. Incidentally, it shows how some doctors have progressed with the times and with the profession from the very recent days when they got their training by the apprentice method and when germs were unknown. Mechanically, the book leaves a good deal to be desired.

GLAISTER'S MEDICAL JURISPRUDENCE AND TOXICOLOGY. Edited by John Glaister, M.D., D.Sc., Barrister-at-Law. Sixth Edition. Cloth. Pp. 747, with illustrations. Price, $8.00. William Wood & Co., Mt. Royal and Guilford Aves., Baltimore, Md., 1938.

This is a practical textbook in the medicolegal field containing detailed descriptions of technic for the examination and identification of a wide variety of the things most likely to come up in this field. Discussions of matters most commonly appearing as subjects of litigation, and also of the law in relation to these various things, make it the kind of book one may turn to with confidence.

APPLICANTS FOR MEMBERSHIP

California

Ostrowsky, William,
173 N. Rowan Ave., Los Angeles.

Illinois

Waschke Harold G. (Renewal),
3206 W. 63rd St., Chicago

Maine

Crespi, Leo P. (Renewal),
Main St., Cherryfield.

Massachusetts

Tomajan, K. George,
20 Charlesgate West, Boston.

Michigan

Bankes, Willard E.,
8007 Harper Ave., Detroit.

Minnesota

Couplin, A. C.,
506 Hamm Bldg., St. Paul.
Shepherd, Burchard P.,
609 Morgan Bldg., Dover.

Missouri

Potter, H. H.,
Masonic Bldg., Brookfield
Chester, Charles O. (Renewal),
Box 73, Granby.
Chester, Mary Alice (Renewal),
Box 73, Granby.
Dinsmoor, Laura B.,
514 Lipper Ave., Higginsville.
Andrews, Ruth V.,
207 Martin Bldg., Independence.
Kiblinger, S. B. (Renewal),
601 Joplin Natl. Bank Bldg., Joplin.
Kneeland, Gerald L. (Renewal),
Versailles.

New Jersey

Peters, Gordon L. (Renewal),
113 Miln St., Cranford.
Hahne, Richard, Jr. (Renewal),
126 Maplewood Ave., Maplewood.

New York

Marks, Robert A.,
11 E. 48th St., New York.
Johnston, Judson W. (Renewal),
406 Herald Bldg., Syracuse.

North Carolina

O'Neill, Addison (Renewal),
19 Jackson Bldg., Hendersonville.

North Dakota

Forbes, Lorne R. (Renewal),
Beach.

Ohio

Van Fleet, F. C. (Renewal),
231 W. Market St., Akron.
Becker, B. H. T. (Renewal),
340 Ohio Bldg., Sidney.
Scatterday, H. F. (Renewal),
14 E. College Ave., Westerville.

Pennsylvania

Theilacker, Charlotte Gants,
Bustleton Pike, Somerton, Philadelphia.

Rhode Island

Cobb, Terrell E. (Renewal),
171 Westminster St., Providence.

Tennessee

Chesemore, L. D. (Renewal),
306 Commercial Bank Bldg., Paris

Texas

Hitch, Samuel H. (Renewal),
2422 19th St., Lubbock
Whitacre, Edward M. (Renewal),
1807 18th St., Lubbock
Lauf, Lawrence J. (Renewal),
Plains

Washington

Bonham, C'yde L. (Renewal),
4507 University Way, Seattle.
Brusso, Gordon W. (Renewal),
1037 E. 65th St., Seattle.
Cunningham, Arthur B. (Renewal),
511 Shafer Bldg., Seattle.
Honnold, James R. (Renewal),
Shafer Bldg., Seattle.

IN THE ARTHRITIDES
ERTRON
Physicians are invited to send for reprints of published reports and descriptive literature on this unique high dosage vitamin D especially developed for the treatment of arthritis.
NUTRITION RESEARCH LABORATORIES, Inc.
332 S. Michigan Avenue Chicago, Illinois

Literature Rack
Brightens your office and helps you to deliver the message of osteopathy to every caller. Keeps your literature clean and accessible.

Size 17x20
Price $2.00
Sent anywhere in the U. S. A. only, express charges collect.
American Osteopathic Association
540 N. Michigan Av., Chicago

"Sage Sayings of Still"
Selected from the Writings of Dr. A. T. Still
With a historical sketch of osteopathy and an appreciation of Dr. Andrew Taylor Still.
For both doctor and patient.
Attractively printed and illustrated.
105 pages.
Handsome suede binding.
Price 50 cents postpaid.
Order from
American Osteopathic Association
540 N. Michigan Ave., Chicago, Ill.

CHANGES OF ADDRESS AND NEW LOCATIONS

Amy, Norma Lee, from 1462 Rhode Island Ave., N. W., to 1720 P St., N. W., Washington, D. C.

Anderson, Julian, from St. James, Mo., to Cuba, Mo.

Axtell, Byron I., from Stanley Bldg., to Axtel Hospital, 205 S. Broadway, Princeton, Mo.

Barquist, Harry A., from 502 Flynn Bldg., to 806 Southern Surety Bldg., Des Moines, Iowa.

Bergland, V. A., from Rock Island, Ill., to Galva, Ill.

Betts, George P., PCO '38; Osteopathic Hospital of Maine, 166 Pleasant Ave., Portland, Maine.

Beukema, A. D., from 350 Leonard St., N. W., to 356 Jefferson Ave., S. E., Grand Rapids, Mich.

Bivens, Thomas L., from 2739 Milwaukee St., to Denver Polyclinic & Postgraduate College, 1600 Ogden St, Denver, Colo.

Brooks, Emily C., from 302-03 Manhattan Bldg., to 1019 W. Broadway, Muskogee, Okla.

Bryan, Hugh C., from 1735 Market St., to 1542 Market St., Redding, Calif.

Bryde, Harold T., from 245 E. 72nd St., to 104 E. 40th St., New York, N. Y.

Bunting, Arthur H., from Boston, Mass., to 36 Pleasant St., Gloucester, Mass.

Carr, E. Morgan, from 187 Westminster St., to 390 Hope St., Providence, R. I.

Cary, Una Waggoner, from Sacramento, Calif., to 506 Forest Ave., Pacific Grove, Calif.

Cave, Francis A., from St. Petersburg, Fla., to 711 S. Rampart Blvd., Los Angeles, Calif.

Conklin, Hugh W., from 716 City Natl. Bank Bldg., to 1708 Central Natl. Tower, Battle Creek, Mich.

Conklin, Monroe K., from 1174 Madison Ave., to 159 Lafayette Ave., N. E., Grand Rapids, Mich.

Conley, George J., from Lakeside Hospital, to 212 Tower Bldg., Kansas City, Mo.

Cozad, William C., from Cleveland, Ohio, to 153 E. Forest St., Clyde, Ohio.

Crews, Theron D., from Redfield, Iowa, to Box 961, Mason City, Wash.

Cusick, W. Rogers, from 217 Civic Center Bldg., to 512 Bank St., Wallace, Idaho.

Czeskleba, Clayton B., from Lincoln, Kans., to Ozawkie, Kans.

Daniels, William L., DMS '38; Osteopathic Hospital of Maine, 166 Pleasant Ave., Portland, Maine.

Dealy, Frank A., from 126 43rd St., to 20 49th St., Sea Isle City, N. J.

Dickinson, Benjamin F., from Philadelphia, Pa., to Main Apts., Main St., Phoenixville, Pa.

Disbrow, Elliott R., Jr., from 45 E. Orange St., to Baker Hospital, 333 N. Duke St., Lancaster, Pa.

Domingues, Jose A., from North Platte, Nebr., to Taos, N. Mex.

Dunham, James E., from Canton, Ohio, to 2256 E. Lake Ave., Los Angeles, Calif.

Eisenhut, LeMar F., Jr., from 5806 N. Marshall St., to 5926 N. Fifth St., Philadelphia, Pa.

Ellsworth, Spencer D., from Kansas City, Mo., to Monroe, Utah.

Emig, Mary E., from 3709 E. Second St., to 748 Bennett Ave., Long Beach, Calif.

English, Lewis Edward, Jr., from Media, Pa., to 318 E. Ninth St., Chester, Pa.

Farley, Cecil H., from Girard, Kans., to 618 Citizens Bldg., Independence, Kans.

Farnsworth, W. C., from Lone Oak, Texas, to 116½ W. Erwin, Tyler, Texas.

Farnum, Doran A., from Charleston, S. C., to 27 N. Elm St., Platteville, Wis.

Filkill, P. Alan, from St. Joseph, Mo., to 203 E. Third St., Big Spring, Texas.

Fisher, Glenn E., from Bartlesville, Okla., to 709 Atlas Life Bldg., Tulsa, Okla.

Forgey, Darrell E., COPS '38; 325 W. Jefferson Blvd., Los Angeles, Calif.

Fox, Marjorie, from Hudson, Mass., to 309 Brett Bldg., Mankato, Minn.

Frock, Harold B., from Bison, S. Dak., to Peoples Bank Bldg., Washington, Ind.

Gardiner, Edward S., from Box 1918, to 4403 Fannin St., Houston, Texas.

Gazdagh, James C., from Bluff City, Kans., to 1621 E. 47th St., Ashtabula, Ohio.

Gentile, Herman A., PCO '38; Osteopathic Hospital of Rhode Island, 1763 Broad St., Providence, R. I.

Gerdine, L. van H., from 5225 Wilshire Blvd., to 1537 N. Laurel Ave., Los Angeles, Calif.

Glascock, Alfred D., from Owasso, Mich., to 305 Walgreen Bldg., St. Petersburg, Fla.

Goddard, Francis D., from Woburn, Mass., to 572 Washington St., Wellesley, Mass.

ZymenoL
Yeast Enzymes in Oil Emulsion

Contains

COMPLETE NATURAL VITAMIN B COMPLEX

Plus

ALL ENZYMES, known and unknown factors of BREWERS YEAST (no live cells).

No irritant drugs—no phenolphthalein—no cascara—no purgative—sugar free. Proven therapy for CONSTIPATION—COLITIS.

Write for clinical data and samples

Only TEASPOON *dosage*

Write for Sample

OTIS E. GLIDDEN & CO. Inc., Evanston, Illinois

AOA-12-38

Goehring, Harry Morgan, from First Natl. Bank Bldg., to Park Bldg., Pittsburgh, Pa.

Goldberg, Louis, from 8020 Bay Parkway, to 2103 62nd St., Brooklyn, N. Y.

Gregory, Paul D., from Lee at First St., to 4 Collier Arcade, Ft. Myers, Fla.

Griffin, Chester A., from East Lansing, Mich., to 204 Bauch Bldg., Lansing, Mich.

Haring, Robert P., from Los Angeles, Calif., to 318 Bank of America Bldg., Visalia, Calif.

Harman, Dan C., from Chicago, Ill., to 415½ Main St., Stevens Point, Wis.

Harth, C. P., from 602 Palace Bldg., to 305 Palace Bldg., Tulsa, Okla.

Head, Ralph D., from 109-11 Agricultural Bank Bldg., to 322-24 Agricultural Bank Bldg., Pittsfield, Mass.

Henrie, W. J. Bryan, from Adrian, Mo., to Grove, Okla.

Hilton, Spencer C., from Pawtucket, R. I. to Saugy Bldg., Warren, R. I.

Hoard, Thomas H., Jr., from Beresford, S. Dak., to Garretson, S. Dak.

Hobart, Raymond L., from 207 Lorraine Bldg., to 122 Fulton St., E., Grand Rapids, Mich.

Howell, J. C., from 473 N. Orange Ave., to 914 Lucerne Terrace, Orlando, Fla.

Hull, J. P., from Lake of the Woods, Ont., Canada, to 833 E. University Ave., Des Moines, Iowa.

Hume, Dean G., from 1022 Seventh St., to 513 Flynn Bldg., Des Moines, Iowa.

Jenkins, Rachel E., CCO '37; Magnolia Hospital, Magnolia at 21st St., Long Beach, Calif.

Jewett, Jesse G., from Leavenworth, Kans., to Hartsock Hospital, 1202 Frederick Ave., St. Joseph, Mo.

Johnson, Edward H., from 227 Grove St., to 81 Claremont Ave., Montclair, N. J.

Johnston, Edward L., from 74 Elm St., to 218 Main St., Waterville, Maine.

Jones, Lawrence H., from Spokane, Wash., to 47 S. W. Second Ave., Ontario, Ore.

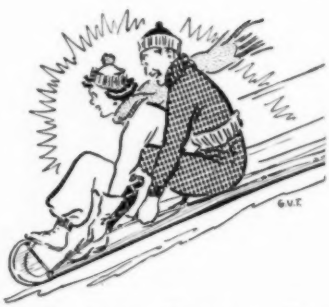
Judge, Alfred J., Jr., CCO '38; 3018 Troost Ave., Kansas City, Mo.

Kagan, Harvey D., from 6496 Ivarene Ave., to Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles, Calif.

King, Charles A., from 2105 Independence Ave., to Conley Clinical Hospital, 619 Garfield Ave., Kansas City, Mo.

Kowitt, Sam N., from 465½ S. Lake St., to 109 S. Normandie Ave., Los Angeles, Calif.

(Continued on page 28)



WHEN WINTER COMES

WHILE Old Man Winter brings new beauty to the landscape and the joys of cold weather sports, he is responsible also for a train of seasonal ills, such as: colds, croup, bronchitis, influenza, pneumonia, sinusitis, tonsillitis, injuries from falls, etc.

Now is the time to circulate well-prepared literature dealing with these ailments. The January issue of OSTEOPATHIC HEALTH was especially designed for this purpose. You will find it attractive in appearance, fascinating to read, and effective in results.

The OSTEOPATHIC MAGAZINE for January also features an article on acute respiratory diseases. Note the wide variety of subject matter in this outstanding issue. It will appeal to everyone.

Osteopathic Magazine for January

OSTEOPATHY AND ACUTE DISEASE. By Edwin H. Cressman, D.O.

How osteopathy achieves some of its most spectacular results in the treatment of pneumonia, and other acute respiratory conditions, including the common cold.

JANUARY—DARK BROWN AND LIGHT BLUE

OSTEOPATHIC PROGRESS IN 1938.

A New Year's review of important gains made by osteopathy during the past year.

THIS WAY LIES SAFETY. By C. A. Tedrick, D.O.

A well-known osteopathic roentgenologist shows how this modern means of visualizing obscure conditions comes to the aid of the family physician as well as other osteopathic specialists.

DEAFNESS CAN BE PREVENTED. By Robert H. Veitch, D.O.

An article stressing the importance of adequate care, including the testing of hearing, during acute attacks of cold in the head, as a means of preventing deafness.

WHAT THE BLOOD COUNT TELLS. By Russell C. Slater, D.O.

A discussion of the blood count as a modern, scientific means of diagnosing certain diseases, with special reference to its use in handling acute appendicitis.

QUESTIONS LAYMEN ASK.

Questions such as newcomers to osteopathy ask are answered in simple, direct form.

MEET — AND EAT — THE BANANA. By Kathryn E. Ritchie.

A discussion of the nutritive and therapeutic value of the ripe banana, its use in infant feeding, in weight-building, and weight-reducing.

WHEN PARALYSIS STRIKES. By Bradley C. Downing, D.O.

Various types of paralysis are described together with osteopathy's role in restoring many potential paralytics to health.

BEWARE THE POISON GAS HAZARD. By R. C. McCaughan, D.O.

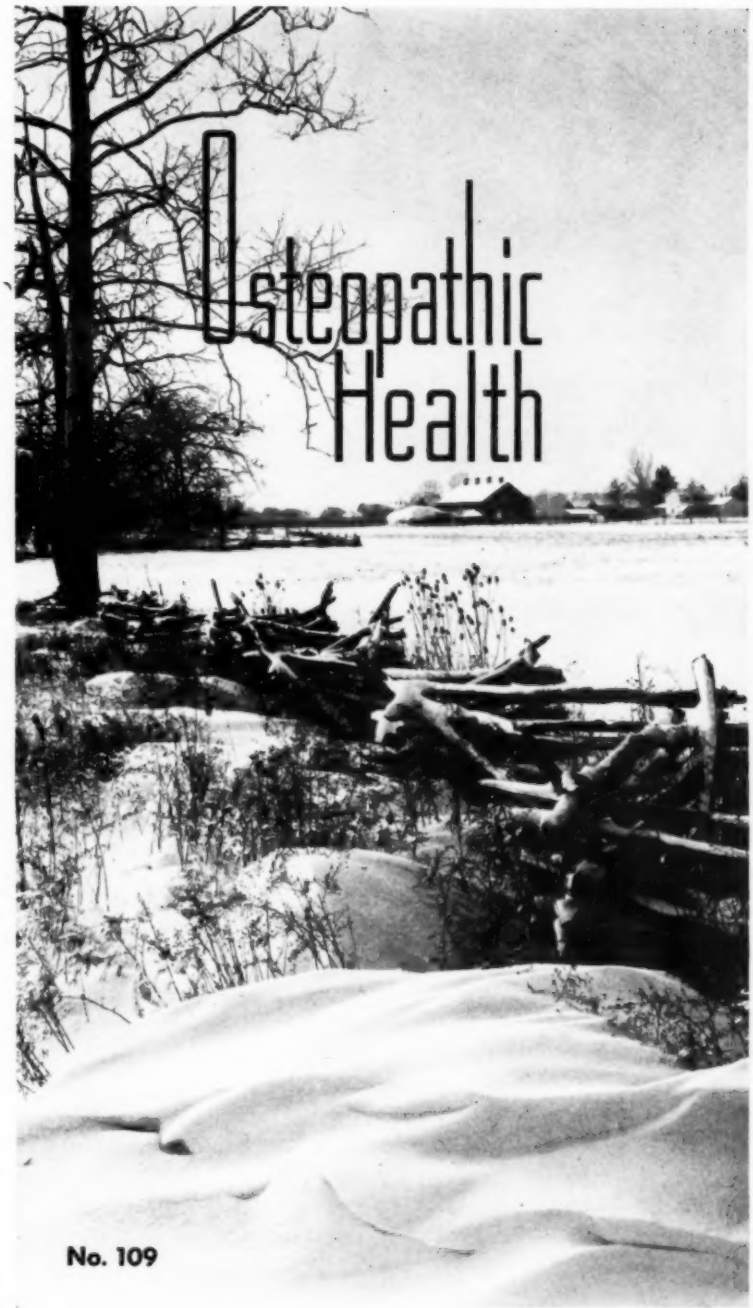
A timely warning regarding the inhalation of the colorless, odorless carbon monoxide by automobile users.

Osteopathic Health No. 109

BEWARE THE COMMON COLD!
Here is a timely article, sensibly written and interestingly informative. The causes of the common cold, its treatment, and possible complications which may arise from neglect are discussed bv a well-known ear, nose, and throat specialist.

FIRST AID IN WINTER INJURIES
Low-back injuries resulting from slipping on ice for example are common this time of year. What osteopathy can do to relieve such hurts is the substance of this article.

HIGH BLOOD PRESSURE
The nervous mechanism underlying increased blood pressure as a result of hypertension, hardened arteries, and other conditions affecting arteries is explained in easily understandable terms in this discussion. The need for osteopathic manipulative treatment is brought out forcibly.



American Osteopathic Association,
540 N. Michigan Ave., Chicago

Please send.....copies of
Osteopathic Magazine, ...Issue
Osteopathic Health, No.....
With professional card.....
Without professional card.....
Name .....
Address .....

OSTEOPATHIC MAGAZINE

Delivered in Bulk to Your Office	Annual Contract	Single Order
Under 200 copies	$6.00 per 100	$6.50 per 100
200 or more	5.00 per 100	5.50 per 100

Mailed direct to list—$1.50 per 100 extra without professional card; $2.50 per 100 extra with professional card.

OSTEOPATHIC HEALTH

Delivered in Bulk to Your Office	Annual Contract	Single Order
Under 200 copies	$4.00 per 100	$5.00 per 100
200 or more	3.75 per 100	4.75 per 100

Mailed direct to list—$1.50 per 100 extra—with or without professional card. 5% for cash on orders of 500 or more. Professional card imprinted free on orders of 50 or more. Shipping charges prepaid (except foreign).

YOUR PROFESSIONAL CARD

IN THE

1939 A. O. A. Directory

May Bring You Referred Work

HOWARD EARL LAMB, D. O.
SURGEON
DENVER, COLO

Leslie Scranton Keyes, D.O.
Steiner Building
47 S. 9th St.
MINNEAPOLIS, MINN.

RILEY D. MOORE
WASHINGTON, D. C.

Bertha W. Branstetter
Osteopathic Physician
Hotel Mayflower
PALM BEACH, FLORIDA

NEW YORK CITY
Dr. A. Bowman Clark
Dr. Louis H. Copeley
77 Park Ave
Cor. 39th St.
—
General Osteopathic Practice
—
LONG ISLAND OFFICE
99 CATHEDRAL AVE.
HEMPSTEAD

DR. G. W. READE
Osteopathic Physician
EAST ORANGE, N. J.
49 Prospect St.
3 Doors from William St

Facsimile of a typical page reduced about one-half

Special net rates for professional cards:

Size 2¼x1¾	$ 8.00
Size 2¼x3¾	12.00
Size 4⅝x1¾	12.00
½ Page	20.00
1 Page	36.00

Professional cards will be placed in geographical order in a special section.

ACT NOW!

Advertising Forms Close December 15th

AMERICAN OSTEOPATHIC ASSOCIATION

540 N. Michigan Ave. **Chicago, Ill.**

THE ROCKY MOUNTAIN CLINICAL GROUP

in DENVER

"The Gateway to America's Most Beautiful Vacationland"

DR. R. R. DANIELS
DR. EDW. W. MURPHY, Associate
Diagnosis
DR. FRANK I. FURRY
Orificial Surgery and Physical Therapy
DR. H. I. MAGOUN
Successor to Dr. D. L. Clark
DR. EMMA ADAMSON
Colonic Therapy and Osteopathy
DR. S. READ HICKS
Deafness, Ear, Nose and Throat

DR. PHILIP A. WITT
DR. ROBERT A. WHINNEY, Associate
Surgery and Urology
DR. N. E. ATTERBERRY
Osteopathy and Obstetrics
DR. H. V. BANKS
Orthodontia and Pediodontia
DR. L. GLENN CODY
General Dentistry and X-Ray
DR. PHILIP D. SWEET
Structural Analysis

DR. H. M. IRELAND
DR. C. H. GLASS, Associate
Ear, Nose, Throat, Cleft Palate, Harelip
DR. N. ESTELLE PARSLEY
General Practice
DR. RALPH B. HEAD
General Practice and Anesthesia
DR. LESTER F. REYNOLDS
Obstetrics and General Practice
DR. RONALD S. MOLDEN
General Practice

MISS E. A. ELDRIDGE, Laboratory and X-Ray Technician

1550 Lincoln Street MEMBERS OF STAFF, ROCKY MOUNTAIN OSTEOPATHIC HOSPITAL Clinical Building

Classified Advertisements

RATES PER INSERTION: $2.00 for 20 words or less. Additional words 10 cents each.
TERMS: Cash with order.
COPY: Must be received by 20th of preceding month.

K.C.O.S. GRADUATE, woman, with field experience and 6 years secretarial experience, would like connection with hospital or institution, or assistantship. Box 1090 c/o Journal.

WANTED: A young osteopathic doctor as house physician in a rapidly growing institution of Natural Therapeutics. Immediate vacancy. Write to the Bergholz Clinic and Sanitarium, 2711 West Wells St., Milwaukee, Wisconsin.

CALIFORNIA

LOS ANGELES
MERRILL SANITARIUM
Neuropsychiatric
Downtown Office
609 South Grand Avenue

DR. THOMAS J. MEYERS
NEUROPSYCHIATRY
Migraine
EPILEPSY
419-421 Pacific-Southwest Bldg.
234 East Colorado St.
PASADENA CALIF.

Drs. Edward B. Jones
and
Forest J. Grunigen
609 So. Grand Ave.
Los Angeles, Calif.
Practice limited to
Urology—Dermatology—Proctology

Charles A. Blind, D.O.
Practice Limited to Eye, Ear, Nose, Throat and Bronchoscopy
609 South Grand Avenue
Los Angeles, California
OLympia 2161
VAndike 1141

CALIFORNIA

Wm. W. W. Pritchard, D.O.
Post Polio-Paralysis
Posture
Body Mechanics
Muscular Re-Education
Bondies Sanatorium
810 Prospect Avenue
South Pasadena, California
Consultation by appointment only.

Dr. Frank C. Farmer
General Osteopathic Practice
4036 Wilshire Blvd.
Los Angeles

DISTRICT OF COLUMBIA

DR. CHESTER D. SWOPE
Osteopathic Physician
The Farragut Apts.
Washington, D. C.

FLORIDA

Dr. W. H. Ellison
Practice limited to
Diseases of the Rectum
(Dover Street Methods)
210 Hall Bldg.
St. Petersburg, Florida

Dr. R. C. Wunderlich
Osteopathic Physician
807-808 Equitable Bldg.
St. Petersburg, Florida

IOWA

DR. ARTHUR D. BECKER
Osteopathic Physician
General Diagnosis
Cardiologist
Des Moines General Hospital
Des Moines, Iowa
Practice limited to consultation

FOR PAIN OF MUSCLE, JOINT OR NERVE ORIGIN
BET-U-LOL
THE ETHICAL TOPICAL ANODYNE
THE HUXLEY LABORATORIES, INC. NEW YORK, N. Y.

MASSACHUSETTS

Robert H. Veitch, D.O.
AURIST
95 High Street
MEDFORD, MASS.

MISSOURI

Collin Brooke, D.O.
Practice Limited to Proctology—Varicose Veins —Hernia
ST. LOUIS
210 Frisco Bldg., 906 Olive St.

NEW YORK

Dr. Thomas R. Thorburn
Dr. J. Marshall Hoag
HOTEL BUCKINGHAM
101 W. 57th Street
New York City

RHODE ISLAND

Dr. F. C. True
SURGEON
1763 Broad St.
PROVIDENCE, R. I.
CHIEF SURGEON
R. I. OSTEOPATHIC HOSPITAL

ENGLAND

RAY M. RUSSELL
Practice of Osteopathy
Grosvenor House, Park Lane
LONDON, ENGLAND

FRANCE

William J. Douglas, D.O.
43 Avenue George V.
(Champs Elysees)
PARIS
Tel. Elysées 60-51
FRANCE

CHANGES OF ADDRESS

(Continued from page 23)

Krebs, Lewis H., from 2718 Troost Ave., to 3043 Forest Ave., Kansas City, Mo.
Kuhnley, Wilbur F., from 23 W. Council St., to 145 E. Alameda St., Tucson, Ariz.
Kyle, Norma V., from 158-09 Sanford Ave., to 40-12 159th St., Flushing, L. I., N. Y.
Lally, Catherine Patricia, from Portland, Maine, to 14 Humphrey St., Swampscott, Mass.
Lanese, John S., from Elmhurst, L. I., N. Y., to 30 Clinton Place, New Rochelle, N. Y.
Larimer, John McMasters, from Miami, Fla., to 21 Belle Isle, Miami Beach, Fla.
Lebengood, Spencer S., from Philadelphia, Pa., to 102 Copley Road, Upper Darby, Pa.
Leonard, Paul J., from St. Johnsbury, Vt., to Charlottetown, Prince Edward Island, Canada.
Littlefield, Don C., from Des Moines, Iowa, to Y.M.C.A., Long Beach, Calif.
Lord, Judson P., from South Paris, Maine, to Box 475, Warren, Maine.
Lose, Wilbur A., from Los Angeles, Calif., to 604 Helm Bldg., Fresno, Calif.
Lum, William Hall, from Brooklin, Maine, to 14 Western Ave., Augusta, Maine.
Maciejewski, Henry J., from 1763 Broad St., to 150 Elmwood Ave., Providence, R. I.
Marsh, Dorothy, COPS '38; Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles, Calif.
Marshall, Wade H., from 201 Wilder Bldg., to First Natl. Bank Bldg., Charlotte ,N. C.
Martin, Charles C., from 1638 S. Van Ness Ave., to 3605 W. Washington Blvd., Los Angeles, Calif.
McNerney, Joseph, from Des Moines, Iowa, to McAninch Bldg., Victor, Iowa.
McQuarrie, Andrew N., from Millinocket, Maine, to Main St., Madawaska, Maine.
Meyer, O. H., from 0429 Norfolk Ave., to 0432 Norfolk Ave., Norfolk, Nebr.
Mill, Melvin C., from New Madrid, Mo., to Sikeston, Mo.
Miller, Lucille Carr, from 257 Downer Place, to 806 Hardin Ave., Aurora, Ill.
Mitchell, Frederick W., from Chicago, Ill., to 1447 Scharpe Ave., Houston, Texas.
Mittelstadt, Wilfred W., from Stevens Point, Wis., to 217½ Central Ave., Marshfield, Wis.
Moody, Kenneth H., from 667 Ashland Ave., to 809 Chilton Ave., Niagara Falls, N. Y.
Morris, F. Raymond, from Franklin, Pa., to Box 344, Rio Grande City, Texas.
Murren, Reginald A., from N. W. Cor. 27th & Prospect Ave., to 212 Tower Bldg., Kansas City, Mo.
Noble, Lillian Wentworth, from 322-23 Bank of America Bldg., to 2440 Third Ave., San Diego, Calif.
Orr, James S., from West Palm Beach, Fla., to 185 N. E. 82nd St., Miami, Fla.
Paul, Ruth Moore, from 938-31st St., to 336 Liberty Bldg., Des Moines, Iowa.
Perkal, Louis, from Brooklyn, N. Y., to 36 Park Ave., New York, N. Y.
Pessis, Jack, from 1537 N. Vine St., to 5180 W. Adams Blvd., Los Angeles, Calif.
Peterson, Lloyd A., from Sarcoxie, Mo., to Kaar Bldg., Burley, Idaho.
Pike, George H., from 28 Fairmount Ave., to 5 Red Road, Chatham, N. J.
Porter, Harry G., Jr., from Pinckney, Mich., to Bancroft, Mich.
Pulliam, Beatrice O., from 94 Grove Ave., to 409 W. Palmer Ave., Detroit, Mich.
Ramsdell, L. P., from 708 Jefferson Ave., to 909 Michigan Ave., La Porte, Ind.
Rastede, George W., from Ashippun, Wis., to Box 9, Hudson, Wis.
Rentschler, Truman, from River Forest, Ill., 304 E. Chicago Blvd., Tecumseh, Mich.
Rich, Roy D., from Glendale, Calif., to 10637 Crockett St., Roscoe, Calif.
Richmond, William G., from 70 Park Ave., to 104 E. 40th St., New York, N. Y.
Rodney, Matilda W., from 224 W. School Lane, to N. W. Greene & Tulpehocken Sts., Philadelphia, Pa.
Rogers, Arthur M., from 208 S. Whitney St., to 904 Main St., Hartford, Conn.
Rogers, Kingsley R., from 403 N. Second St., to 122 S. Fourth St., Clear Lake, Iowa.
Rossman, Glenn O., from 511-12 Congress Bldg., to 166 Pleasant Ave., Portland, Maine.
Russo, Donato L., from 2 Maine Ave., to 71 Touro St., Newport, R. I.
Schefneker, Bernardine, from 1002 Capitol Park Bldg., to 756 W. Bethune Ave., Detroit, Mich.
Schooley, Thomas F., from Harbor Beach, Mich., to 15204 Mack Ave., Detroit, Mich.
Seaman, Kent L., from Pasadena, Calif., to Gaskins Bldg., Ft. Wayne, Ind.
Shablin, Herman, from 4432 St. John Ave., to 4620 Independence Ave., Kansas City, Mo.
Shallenberger, S. Andre, COPS '38; Los Angeles County Osteopathic Hospital, 1100 N. Mission Road, Los Angeles, Calif.
Sharkey, Paul, from Brockton, Mass., to Main St., Lancaster, N. H.
Sheets, Joseph D., from 706 Murphy Bldg., to 12561 Third Ave., Highland Park, Detroit, Mich.
Siegel, Saul, from Tolstoy, S. Dak., to Gettysburg, S. Dak.
Simpson, George Richard, DMS '38; Southwestern Osteopathic Sanitarium & Hospital, 3244 E. Douglas Ave., Wichita, Kans.
Spencer, Leland, from 712 Union Natl. Bank Bldg., to 3060 E. Douglas Ave., Wichita, Kans.
Stevenson, Glenn Edward, from Independence, Mo., to Mercy Hospital, 823 Faraon St., St. Joseph, Mo.
Summers, Arthur W., from 25 Garden St., to 1558 Massachusetts Ave., Cambridge, Mass.
Teague, Reginald W., from St. Albans, Vt., to 320 Chester Ave., Moorestown, N. J.
Thompson, Homer M., from Lockney Drug Bldg., to Baker Hotel, Lockney, Texas.
Thoreson, John O., from 7-8 Hoskins-Myer Bldg., to 10-12 Hoskins Block, Bismarck, N. Dak.
Ulmer, John L., from Detroit, Mich., to 3007½ Monroe St., Toledo, Ohio.
Weintraub, Aaron, FCO '38; 26 W. Ninth St., New York, N. Y.
Wells, C. Stillman, from 506 F. & M. Bldg., to 1717 "H" St., Sacramento, Calif.
Williams, Lorna M., from Ft. William, Ont., Canada, to 1815 Santa Clara Ave., Alameda, Calif.
Withington, L. Bertram, from 182 Main St., to 641 Central Ave., East Orange, N. J.
Witmyer, Rachel M. A., from Palmyra, N. J., to 141 S. Beaver St., York, Pa.,
Wittholn, Edward, from 185 Hancock St., to 1 Plaza St., Brooklyn, N. Y.

For Sale

Through the courtesy of the American College of Osteopathic Surgeons we are able to offer members a few bound copies of the

SURGICAL SUPPLEMENT

which was run in four issues of the Journal of A.O.A. during the past year. 64 pages. Indexed.
Price $1.00 per copy.

A.O.A. 540 N. MICHIGAN AVE. CHICAGO, ILL.

Advertisers in This Issue

Books, Literature, Charts

American Osteopathic Association ..... Cover II, 22, 24, 25, 26, 28
Clinical Osteopathy 29
Saunders, W. B., Company ..... Cover I
The Year Book Publishers, Inc. 20

Colleges, Training Schools, P. G. Courses

College of Osteopathic Physicians and Surgeons 16
Denver Polyclinic Group ..... Cover III
Kirksville College of Osteopathy and Surgery 30

Foods, Waters and Toilet Preparations

Corn Products Sales Company 19
Gerber Products Company 18
Horlick's Malted Milk Corporation 29
Kalak Water Company of New York, Inc. 6
Knox Gelatine Laboratories 10
Mellin's Food Company 14
Ralston Purina Co. 5

Instruments, Appliances, Equipment, Surgical Dressings, Supports

Camp & Company, S. H. 1
De Vilbiss Company 12
McIntosh Electrical Corp. 7
Spinalator Co. 16

Miscellaneous

American Can Company 4
Classified Ads 27
Professional Cards 27, 28

Pharmaceutical, Endocrine and Vitamin Products

Barnes, A. C., Company 21
Bovinine Company 3
Ciba Pharmaceutical Products, Inc. 9
Doho Chemical Corp. 7
Emerson Drug Company 11
Glidden, Otis E., & Co. 23
Huxley Laboratories 27
Leeming & Co., Inc., Thos. 12
Miles Laboratories 8
Nutrition Research Labs. 22
Od Peacock Sultan Co. 18
Pina-Mestre Clinics, Inc. ..... Cover III
Spicer & Company ..... Cover III
St. Joseph Laboratories 14, 18
U. S. Vitamin Corporation 13
Vapo-Cresolene Co. 14
Vitamin Products Company ..... Cover IV
Vitaminerals, Inc. ..... Cover III
Wm. R. Warner, Inc. 17
Winthrop Chemical Company 15

Shoes

Walk-Over Shoes 16

WHEN SLEEP FAILS TO COME

A hot drink before retiring is an aid in promoting restful sleep. Horlick's Malted Milk, hot, has special advantages for this purpose in that it is pleasant in flavor, easily and quickly digested, bland and nourishing.

The busy physician, tired mentally and physically from the strain of a long day or disturbed night, often finds relief in this simple measure — a hot drink of "Horlick's" to invite sleep.

Horlick's Malted Milk Tablets to be dissolved in the mouth, are convenient to keep at hand, offering concentrated nourishment, quickly assimilated at any time of the day or night.

HORLICK'S MALTED MILK CORP. **Racine, Wis.**

Probably You'd Like It, Too

[*An Unsolicited Letter Received by the Editor of Clinical Osteopathy*]

"Dear Dr. Rowlingson:

"For several years I have been increasingly conscious of the value of *Clinical Osteopathy*. . . . I enjoy it very much, like the style, the general policy of the publication, and keep the numbers for reference. It is one way of keeping up to date, without doing a lot of book buying and hard study." . . .

Fraternally,

_____D.O.

(Name on Request)

Subscription, $2.00 a year in United States
$2.50 in Canada and Foreign Countries

CLINICAL OSTEOPATHY
799 Kensington Road, Los Angeles, California

GO TO COLLEGE

Preprofessional college study is required for admission to the study of osteopathy and surgery as follows:

At Present: **Graduation from the standard high school and one year of successful study in an accredited college or university.**

September, 1940: **Graduation from the standard high school and two years of successful study in an accredited college or university.**

September, 1942: **Graduation from the standard high school and two years of successful study in an approved college or university including a specified amount in the subjects of chemistry, biology and physics.**

The next class will matriculate January 23, 1939.

Address All Inquiries to the Dean

Kirksville College of Osteopathy and Surgery

Kirksville, Missouri

EDWENIL

For Intramuscular Injection

An Activator of the Natural Defense Mechanism

SPICER AND COMPANY
Glendale, Calif.
NEW YORK CHICAGO
DALLAS PORTLAND

PINA-MESTRE

HERNIAL SOLUTION

● The technic required with PINA-MESTRE is so simple and the results so successful, that it is preferred generally by the profession. 16 years of clinical records—and not ONE failure so far as the medicine is concerned.

Write for Technic and Literature

AOA—12-38

PINA-MESTRE CLINICS, INC., Orlando, Fla.

Thanks

for your splendid cooperation during 1938

OUR BEST WISHES FOR A

Merry Christmas

and a

Prosperous 1939

VITAMINERALS, INC.

3636 Beverly Blvd., Los Angeles, Calif.

Chartered in Colorado *Recognized by I.S.O.* *Approved by A.O.A.*

DENVER POLYCLINIC GROUP
DENVER POSTGRADUATE COLLEGE

Courses of study covering General Review and Efficiency, the Art of Practice, also the Specialties. Annual Short Courses given each summer. Graduate instruction in diagnosis and surgery of the eye, ear, nose and throat at any time.

For further information address

DR. C. C. REID
DR. H. M. HUSTED

R. W. HEINBURGER
Business Manager

1600 Ogden Street
Denver, Colorado

Why not be **HONEST** *about it?*

Research in the vitamin field during the past 25 years has brought to light some interesting data:

1. The vitamins are now known to exist as complexes, groups or families of related and similar organic principles.

To rate any vitamin complex in terms of any one of its fractions is just as illogical as to set up as a standard for the carbohydrate component of a diet a specified quantity of pure cane sugar. (It is just as unscientific to purify vitamins as food components as to denature carbohydrates. They cease to be natural foods, and become drugs, the effects of which may be quite at variance with that of the original complex, and of a narrower range of action.)

2. The different factors of a complex have quite a different value in serving as the vitamin for different species.

To set up as a standard unit a given quantity of a pure vitamin, therefore, can be as deceiving as to specify for the carbohydrate component of a diet a given quantity of pure cellulose. (Cellulose is carbohydrate only for such species of test animals as rabbits, goats, cows and horses. Its value is zero in human nutrition.)

These statements are not idle arguments, but are BASIC LAWS OF NUTRITION. The fetish of "scientific standardization" has been the downfall of many makers of vitamin concentrates.

VITAMIN A Vitamin A was said to be standardizable in terms of carotene. Now we find that many patients show an A deficiency because they cannot convert carotene to Vitamin A.*
Vitamin A was said to be standardizable in rat units. Now we find that in equal amounts according to rat units, Vitamin A from spinach is TEN TIMES as effective in the human as the Vitamin A from fish oil.*

VITAMIN B Vitamin B was said to be standardizable in terms of pure "thiamin". Now we know that the Vitamin B complex contains FOURTEEN known components besides thiamin.*

VITAMIN C Vitamin C was said to be standardizable in terms of "Ascorbic Acid". After its discoverer received the Nobel prize for his work, he found that IT LACKS THE ANTIHEMORRHAGIC FACTOR, the deficiency of which is the cause of the major symptoms of scurvy.

VITAMIN D Vitamin D was standardized in terms of rat units, with the later finding that THE RAT VITAMIN WAS NOT VITAMIN D AT ALL,* and that all the irradiated materials sold up to that point contained a new substance having toxic properties (toxisterol).

VITAMIN E Vitamin E was not recognized as necessary for the human until of late, but it is now known to be essential, and in purified forms LOSES ITS POTENCY, being most effective if the "complex" is not taken apart.*

VITAMIN G Vitamin G investigations have brought to light a chemically different Vitamin "G" FOR EACH SPECIES TESTED in one series of experiments.*

The Vitamin Products Company has consistently followed the policy of recognizing clinical tests as the only practical criterion of merit. We believe our reputation for the definite results producible with V. P. Concentrates is a far better guide to prospective users and prescribers than any other attempts at "scientific" measurements.

We are as desirous as anyone of finding a more accurate and effective means of standardization of Vitamin Products, but until such means are available "why not be honest about it?"

AOA 12-38

*Copies of references supplied on request.

VITAMIN PRODUCTS COMPANY

2023 W. WISCONSIN AVE. MILWAUKEE, WISCONSIN

VITAMIN PRODUCTS CO. V·P